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THE LEAFHOPPER TRIBE ALEBRINI (HOMOPTERA: CICADELLIDAE)

By David A. Young, Jr.[1]

The last taxonomic treatment of the species of the tribe Alebrini, by McAtee in 1926, included 2 genera and 26 species, 9 of which McAtee had not seen. The alebrine genera were treated by the present writer in 1952, but it was noted then that material was too limited to permit formulation of sound generic concepts and that some of the genera were heterogeneous. Although much more material has been available for the present study, the large number of species represented by only a few specimens suggests that additional collecting will bring many more species to light, and that the present classification ultimately will be considered as an early, preliminary one. Ninety-six species and subspecies in 25 genera are treated. The large number of genera in proportion to the number of species, when viewed in the light of knowledge of genera in other faunal regions in other cicadellid tribes, leads again to the conclusion that the forms studied are only a fragment of the complete fauna. However, the small proportion of species to genera is not likely to persist when more collecting is done, as illustrated by the fact that three of the five

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monobasic genera of my 1952 classification are now known to contain additional species.

The relationship of the tribe to higher taxonomic categories of leafhoppers is not clear. According to present evidence, the group belongs in the subfamily Typhlocybinae, but is not closely related to any of the other typhlocybine tribes. The interrelationships of genera within the tribe are not always clear. Such relationships as are evident are discussed in connection with the generic descriptions.

The genera are primarily Neotropical and southern Nearctic, except the genus *Alebra*, which is Holarctic. Paoli (1941) described the subgenus *Alebra* (*Afralebra*) from a single female from Italian Somaliland. The true position of this form must remain in doubt until males can be examined.

Very little is known of food plants in most genera. The known food plants represent diverse families, grasses as well as woody plants.

Tribal characters: The tribe Alebrini includes all species of the subfamily Typhlocybinae in which an appendix is present on the forewing, a characteristic not found in the other tribes. The following combination of characters also separates them from other tribes: the presence of ocelli, the occurrence of two vannal veins in the hind wing, the presence of sternal abdominal apodemes in the male, and in the ninth tergum of the male a dorsal preanal excision that is deeper than that usually found in the subfamily.

External anatomy: The shape of the head is variable, ranging from strongly produced before the eyes in *Lawsonellus* and *Protalebrella* to very slightly produced, with anterior and posterior margins parallel, as in *Alebra*, *Albera*, *Lareba* and *Rabela*. The proportions of the dorsal surface of the head, the crown, have been employed as distinguishing characters at specific and occasionally at generic level. These proportions [2] have been obtained by comparing the median length of the crown with its interocular width, i. e., the shortest distance between the inner margins of the eyes. The disc of the crown may be flat, convex, or concave. Ocelli are present in all species, located almost always on the rounded margin between the crown and the face, and usually equidistant from inner eye margin and median line of head. The face is usually slightly convex in profile and divergent from the profile of the dorsum. No species were found with the contour of the face parallel to that of the crown, a condition that occasionally occurs in the Dikraneurini.

The pronotum is narrowest anteriorly, its lateral margins diverging posteriorly to a variable degree. The humeral margins are convex, and the posterior margin is usually shallowly concave, broadly exposing the scutellum. Measurements of the pronotum used in this

[2] Unless otherwise specified, all proportions in the descriptive portion of this paper apply to males.

paper refer to its length at the midline and its greatest width. The length of the pronotum exhibits more individual variation than the length of the crown. In most Alebrini the pronotum is longer than the crown and wider than the head including the eyes.

The forewing has an appendix which may extend to or around the apical wing margin. The apical wing margin is usually smoothly convex, but it may be obliquely truncate (*Protalebrella*). The venation varies greatly in the tribe, in minor respects among specimens of a species, and even between wings of a single specimen. The longitudinal veins are obscure in the middle portion of the wing, but distinct anteapically and apically. Usually veins R, M, and Cu extend directly to the bases of the apical cells, but rarely there are supernumerary cross veins, and occasionally some coalescence of the longitudinal veins anteapically (e. g., *Aphanalebra*, *Rabela*). The apical cells are four and are numbered beginning with the innermost with the wing in repose, but because this system of numbering is new to many users, the terms "inner" and "outer" are frequently substituted in the discussions which follow. There is much variation in their form. Most often the inner apical cell is broader basally than at its apex, the second apical cell is slender and parallel-sided, the third apical cell is triangular and often stalked, and the outer apical cell is short, not attaining the apical wing margin, and with its base proximad of the base of the third apical cell, but many departures occur from this commonest condition. In the corium the cell adjoining the claval suture is referred to as the brachial cell. In the middle third of the corium near the costal margin there usually occurs a waxy oval area, which is referred to as the costal plaque. The contiguous wing margins, when the wings are in the position of repose, are the commissural margins.

The hind wings have three longitudinal, one oblique, and three transverse veins. The longitudinal veins, beginning with the one nearest the costa, are R, M, and Cu. In the apical region, a continuation of vein R attains the apical wing margin, occasionally after becoming confluent with the anterior branch of vein M for a short distance. This apical portion of vein R, for convenience, has been termed the "posterior branch of vein R." It is usually connected with the anterior branch of vein M by a short cross vein which varies so much in postion that it has little taxonomic importance. In some species the posterior branch of vein R is evanescent apically, and in some it is confluent with the anterior margin of the wing before the wing apex.

The next more posterior apical vein of the hind wing is believed to be M_{1+2}, and the third is M_{3+4}. The hindmost vein in the apical series is Cu_1 which Evans (1946, p. 55) states is unbranched. This

vein is connected to vein M_{3+4} by a cross vein (m-cu) that often appears oblique or even longitudinal.

The oblique vein is Cu_2. The location of its apex has some taxonomic value. Most frequently the apex occurs at a point basad of the m-cu cross vein, but occasionally it occurs at a point opposite that cross vein.

The transverse veins of the hind wing are the first and second vannal veins, lying between the vannal and jugal folds, and a jugal vein in the jugum.

In the males of all the species examined, there is a pair of sternal intra-abdominal apodemes arising near the base of the abdomen and extending caudad into the abdominal cavity. Actually these have been shown to arise from abdominal sternum II, but the origin is not apparent without careful study and is of little importance for descriptive purposes. The length of the apodemes is useful to some extent. They may be vestigial or very prominent, and in the genus *Balera* they may be capitate apically. Their length is shown roughly in the descriptions and illustrations by indicating how many of the abdominal conjunctivae POSTERIOR TO THEIR ORIGIN they traverse. Thus, if the description states that the apodemes "attain the second conjunctiva," the words "posterior to their origin" are implied in each case to make the description correct morphologically. This is, of course, a rough measurement because the macerated abdomen is elastic, but even considering the variation in the length of the apodemes themselves, it permits useful comparisons.

The last visible sternum of the female is the seventh, and the shape of its hind margin is of taxonomic importance. On each side of the ovipositor, on the pygofer, there is a group of setae, usually irregularly spaced, and usually pale in color.

The tergum of the ninth segment of the male is termed the PYGOFER which, together with the ninth sternum and its lobe-like posteriorly-projecting male plates forms the genital capsule. The genital capsule is closed posteriorly by the intersegmental membrane between segments IX and X, the latter being the first segment of the anal tube. The sclerotized dorsal portion of the pygofer appears excised in macerated specimens, the excision representing the dorsal portion of the conjunctiva between segments IX and X. The excision is deeper in the Alebrini than is usually the case in other typhlocybine leafhoppers. The basal transverse sclerotized area before the excision may be an uninterrupted band, more heavily sclerotized or not, extending between and continuous with the lateral portions of the pygofer, or it may be separated from the larger lateral area of the pygofer by a weakly sclerotized line of flection laterally, or occasionally by internal heavily sclerotized bars, in the last two instances forming a

distinct ninth tergite. Along the dorsal excision, on each side, the integument is frequently thicker, and often there is a ventral extension of this thickened area, forming a dorsal pygofer process. Other pygofer processes may arise from the apical margin, the ventral margin, or on the disc. They are occasionally only differentially sclerotized areas of the pygofer wall, and tenuous, hence not very reliable as taxonomic characters, but often they are strong, sharply differentiated structures, frequently projecting away from the pygofer wall, and are then much less variable. The chaetotaxy of the lateral areas of the pygofer exhibits only slight variation, and has been found to be a useful character. The location of the very minute setae, termed "microsetae" in my 1952 paper, is not utilized in the present classification. The "macrosetae" are those conventionally termed "setae" in leafhopper taxonomy. They are easily observed with low magnification. Only in the genus *Alebra* are there setae of somewhat intermediate size. The macrosetae are usually few and in a characteristic location on the pygofer. Less commonly they are fairly numerous and are generally distributed over the pygofer disc but even then the pygofer is never heavily setose as is often the case in the subfamily Deltocephalinae.

The so-called "internal male genitalia" consist of the styles, the connective, and the aedeagus. The styles are more intimately connected with the plates in the Alebrini than is the condition in most leafhopper tribes, rendering dissection more difficult. They may be long or short, and there is occasionally a preapical lobe which is, however, usually less pronounced than that found in the Dikraneurini, Zyginini (*Zygina* and its relatives), or Erythroneurini. When a preapical lobe is present, that portion of the style from its cephalic end to the apex of the lobe is termed the SHANK.

The connective may be entirely (*Paralebra*, *Trypanalebra*, et al.) or partially (*Protalebra*, sensu stricto) membranous, or it may be entirely sclerotized (most genera). The aedeagus varies greatly among genera and occasionally even among species of a single genus. The basal opening, the atrium, which admits the gonoduct, may be at the base of the aedeagus or it may be more distal in position, in which case the more basal portion of the aedeagus is termed the PREATRIUM. There is usually a sclerotized area above the atrium, the DORSAL APODEME, to which muscles are attached, but this may be inconspicuous. Occasionally it is paired, and rarely it is asymmetrical. Its form is often useful in classification. The term SHAFT is applied to that portion of the aedeagus that bears the gonoduct. The shaft differs greatly in form in different species. There are also aedeagal processes of various sorts. These are called preatrial, atrial, or shaft processes, according to their point of origin.

In all of the measurements giving total length, the measurements were taken from the tip of the crown to the apex of the forewings in repose.

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Key to genera of Alebrini [3]

1. Forewing with appendix extending around wing apex *and* hind wing with submarginal vein distinct from apical wing margin 2
   Forewing with appendix not extending around apical wing margin, or if so (*Diceratalebra interrogata* (Knull)) then hind wing with submarginal vein confluent with apical wing margin 3
2. Hind wing with submarginal vein continuous apically with posterior branch of vein R; male plates with an apical lobe bearing a tuft of setae (distribution Holarctic) . . . . . **Alebra** Fieber (p. 134)
   Hind wings with submarginal vein extending beyond posterior branch of vein R, and curved basad along costal margin (distribution Neotropical). **Orsalebra** Young (p. 141)
3. Male with anal tube having lateral paired and median unpaired processes. **Albera,** new genus (p. 143)
   Male occasionally with lateral paired anal processes, never with unpaired median process 4
4. Male with connective entirely membranous 5
   Male with connective, at least partly, heavily sclerotized 9
5. Male without an unpaired aedeagal process; paired aedeagal processes present . . . . . **Paralebra** McAtee (p. 145)
   Male with an unpaired aedeagal process; paired processes present or absent . 6
6. Male with aedeagus symmetrical 7
   Male with aedeagus markedly asymmetrical 8
7. Crown of head with median length more than one-half interocular width and more than one-third median length of pronotum; male usually with paired aedeagal processes . . . . . **Trypanalebra** Young (p. 153)
   Crown of head with median length less than one-half interocular width and less than one-third median length of pronotum; male without paired aedeagal processes . . . . . **Blarea,** new genus (p. 159)

[3] The genus *Hadralebra* Young (Univ. Kansas Sci. Bull. vol. 35, p. 19, 1952) was erected for *Dikraneura* (*Hyloidea*) *laticeps* (Osborn) (Ann. Carnegie Mus. vol. 18, p. 277, 1928), although the genitalia are unique among typhlocybine leafhoppers, as was stated in the original generic description. A subsequent study of the genitalia of a number of neotropical Tettigellinae has revealed that *Hadralebra* is closely related to some tettigelline genera, and the study of specimens with entire wings will probably eventually confirm the correctness of its transfer to the Tettigellinae, made at this time.

8. Male with paired aedeagal processes; aedeagal shaft not recurved apically; forewing without confluent longitudinal veins before apical cells.
Relaba, new genus (p. 161)
Male without paired aedeagal processes; shaft recurved apically; forewing with veins M and Cu confluent proximad of the apical cells.
Aphanalebra McAtee (p. 163)
9. Aedeagus with two pairs of ventral processes arising at atrium.
Osbornulus, new genus (p. 164)
Aedeagus not so 10
10. Aedeagus drastically asymmetrical . . . . . **Protalebra** Baker (p. 166)
Aedeagus not so 11
11. Style apex strongly sigmoid in lateral aspect; sternal abdominal apodemes elongate, slender, capitate, traversing at least two abdominal conjunctivae.
Balera Young (p. 171)
Style apex not strongly sigmoid in lateral aspect; sternal abdominal apodemes rarely (*Rhabdotalebra*) traversing more than one abdominal conjunctiva, not slender or capitate 12
12. Style in lateral aspect with a basal lobe extending beneath adjoining arm of connective (fig. 14,*c*); aedeagus with widely-separated short paired dorsal apodemes (fig. 14,*d*); head broadly rounded, only very slightly longer at middle than next to eye . . . . . **Brunerella** Young (p. 176)
Not with above combination of characters 13
13. Crown with interocular width one-half greater than median length; forewing with outer apical cell broader than long; style greatly elongate.
Lareba, new genus (p. 180)
Without the above combination of characters; rarely with any one of above characters 14
14. Crown with median length more than twice interocular width; connective T-shaped with unpaired portion directed cephalad.
Lawsonellus, new genus (p. 182)
Crown with median length less than twice interocular width; connective not as above 15
15. Forewing with base of outer apical cell only slightly basad of base of third apical cell, the bases almost in same straight line which is at right angles to the long axis of the wing (fig. 17,*c*) . . . . . **Habralebra** Young (p. 183)
Forewing with base of outer apical cell, at least at its intersection with costal margin, distinctly basad of base of third apical cell 16
16. Color patterns of forewings including a conspicuous trans-commissural omega-shaped marking over the wings in repose (exception *lenticula* (Osborn)) . . . . . **Omegalebra,** new genus (p. 199)
Forewings without omega-shaped marking 17
17. Male pygofer notched at apex (fig. 24,*g*); aedeagus with unpaired ventral process arising at base of shaft, exceeding shaft in length (fig. 24,*f*).
Erabla, new genus (p. 212)
Without above combination of characters 18
18. Aedeagal shaft semicircular or nearly so in lateral aspect; style with apical extension broadened at extremity . . . . . **Rabela** Young (p. 214)
Not as above 19
19. Aedeagus with dorsal apodeme transverse, distinctly bilobed at apex; pygofer processes absent (exception: *sarana*); anal processes present (figs. 26, 27).
Elabra Young (p. 218)
Aedeagus with dorsal apodeme longitudinal, not lobed, or weakly lobed at base, or absent; anal processes present or absent 20

20. Style with preapical lobe usually very well developed; aedeagus with dorsal apodeme usually saddle-shaped in lateral aspect and bilobed at cephalic extremity; male pygofer with macrosetae nearly always restricted to posterodorsal portion (figs. 28–30) . . . **Rhabdotalebra** Young (p. 226)
Not so 21
21. Aedeagus with dorsal apodeme distinct, often elongate 22
Aedeagus without dorsal apodeme . . . . . **Abrela,** new genus (p. 240)
22. Length of male more than 4 mm.; color pattern including a prominent zigzag vitta of red or black on each forewing; anal processes extending anteroventrad almost to ventral pygofer margin; ninth tergum with tergite delimited caudally and laterally by an integumental thickening.
Beamerulus, new genus (p. 242)
Length of male less than 4 mm.; color pattern not as above; anal process absent or very short, at most not extending beyond middle of pygofer; ninth tergite usually absent, occasionally delimited laterally but not caudally as described above 23
23. Aedeagus bifurcate apically (fig. 33,*e*) . . . **Diceratalebra** Young (p. 247)
Aedeagus not so 24
24. Apex of forewing obliquely truncate or emarginate; anal tube without processes; color never including oblique angular red or orange markings.
Protalebrella Young (p. 255)
Apex of forewing rounded; anal tube with short processes; color pattern often including prominent oblique red or orange vittae.
Barela, new genus (p. 264)

Genus *Alebra* Fieber

FIGURE 1

Compsus Fieber (*nec* Schoenherr, 1823), Verh. Zool.-Bot. Ges. Wien, vol. 16, p. 507, 1866.

Alebra Fieber, Katalog der Europäischen Cicadinen, p. 14, 1874 (nomen novum for *Compsus* Fieber).

Type of the genus *Cicada albostriella* Fallén by subsequent designation of Oshanin (Kat. Pal. Hemip., p. 111, 1912).

Hind wing with submarginal vein distinct and separate from apical margin, extending around apex and confluent with apex of posterior branch of vein R which is entire; vein Cu_2 confluent with submarginal vein at point opposite m-cu. Forewing with appendix extending around wing apex which is smoothly rounded; inner apical cell slender, not greatly wider in basal third than in apical half; about as long as second and third apical cells which are slender and parallel-sided; outer apical cell elongate triangular, with base slightly proximad of base of third apical cell, occasionally obsolescent. Female seventh sternum broadly produced posteriorly with apex shallowly emarginate. Male plates greatly exceeding posterior pygofer margin, lobed apically, each with a row of weak macrosetae along mesal margin and a cluster of dorsal macrosetae on the apical lobe. Pygofer with posterior margin produced in a dorsal and a ventral lobe; disc without macrosetae (occasionally with elongate fine microsetae along dorsal margin

of ventral lobe); pygofer process an inrolled portion of ventral pygofer margin. Ninth tergum with a differentially sclerotized transverse bar, without a tergite. Anal processes absent. Style elongate, without strong preapical lobe, apex decurved, acute. Connective triangular or V-shaped. Aedeagus with preatrium distinct; dorsal apodeme well-developed, slender and slightly compressed laterally, or membranous; shaft simple, slightly curved dorsad, without processes; gonopore apical. Sternal abdominal apodemes short, not traversing first conjunctiva. Head very weakly produced; crown with median length approximately two-thirds interocular width; ocelli on broadly rounded margin between crown and face, closer to median line than to inner eye margins. Pronotum at least twice median length of crown, wider than head including eyes; lateral margins strongly divergent posteriorly. Face slightly convex in lateral aspect.

Distribution is Holarctic.

The complete appendix of the forewing, the lack of macrosetae on the male pygofer and the apically lobed male plates with clustered setae on the lobes set *Alebra* well apart from other alebrine genera.

In addition to the species treated below, W. Wagner has described *Alebra sorbi* (Zentralbl. Ges. Forstw., vol. 3, p. 43, 1949), which I have been unable to examine. The species is closely related to *A. albostriella* (Fallén).

Key to species of *Alebra*

1. Pygofer, in lateral aspect, with posterior margin vertical in upper half, not notched . . . . . **albostriella** (Fallén)
   Pygofer, in lateral aspect, with posterior margin strongly or weakly notched in upper half 2
2. Pygofer with posterodorsal margin strongly notched (fig. 1,*g*); connective strong, elongate-triangular; style expanded anteapically . . **aurea** (Walsh)
   Pygofer with posterodorsal margin weakly notched (fig. 1,*k*), connective weak, shallowly V-shaped; style gradually tapering . . . . . **fumida** Gillette

Alebra albostriella (Fallén)

FIGURE 1,*a–c*

Cicada albo-striella Fallén, Hemiptera Sveciae vol. 2, p. 54, 1826.
Cicadula elegentula Zetterstedt, Fauna insectorum Lapponica, vol. 1, p. 536, 1828.
Typhlocyba discicollis Herrich-Schaeffer, Deutschlands Insecten, Heft 124, p. 8, 1834.
Eupteryx fasciata Curtis, Brit. Ent., vol. 14, pl. 640, 1837.
Typhlocyba fulveola Herrich-Schaeffer, Deutschlands Insecten, Heft 164, p. 16, 1838.
Typhlocyba wahlbergi Boheman, Handl. Svenska Vet. Akad. (1845), p. 42, 1845.
Typhlocyba eximia Hardy, Trans. Tyneside Nat. Club, vol. 1, p. 417, 1850.
Alebra albostriella var. *viridis* Rey, Échange, vol. 10, p. 46, 1894.
Alebra flavocephala Kupka, Ent. Nachr., vol. 25, p. 33, 1899.
Alebra albostriella var. *albostriella* McAtee (in part?), Journ. New York Ent. Soc., vol. 34, p. 144, 1926.

Alebra albostriella var. *insigita* McAtee, Journ. New York Ent. Soc., vol. 34, p. 143, 1926.
Alebra albostriella var. *insignita* McAtee, Journ. New York Ent. Soc., vol. 34, p. 144, 1926.
(?) *Alebra albostriella* f. *costatella* Matsumura, Ins. Mats., vol. 6, p. 67, 1931.
Alebra albostriella var. *diluta* Ribaut, Faune de France, vol. 31, p. 196, 1936.
Alebra albostriella var. *dufouri* Ribaut, Faune de France, vol. 31, p. 197, 1936.
Alebra wahlbergi var. *brunnea* Ribaut, Faune de France, vol. 31, p. 198, 1936.
Alebra wahlbergi var. *pallescens* Ribaut, Faune de France, vol. 31, p. 198, 1936.
Alebra albostriella (part.) of American authors, nec Fallén.

Length of male 3.2–3.9 mm., of female 3.5–4.5 mm. Crown short, broad, anterior and posterior margins parallel. Male pygofer in lateral aspect with posterior margin vertical in upper half, the posterodorsal portion not, or only very slightly produced posteriorly, posterior margin in lower half produced posteriorly in a digitiform lobe, and appearing to have a tapered differentially-sclerotized process (actually merely the inrolled ventral pygofer margin). Style elongate, slender, abruptly decurved apically, in broadest aspect slightly expanded basad of the decurved portion, but without a distinct preapical lobe. Connective elongate-triangular. Aedeagus slender and elongate, preatrium short, dorsal apodeme elongate, slender, subcylindrical except expanded portion near union with shaft; shaft elongate, slender, gradually tapering, without processes, slightly bisinuate, the apex slightly procurved, shaft slightly asymmetrical in ventral aspect. Abdominal sterna of male bearing microsetae.

Color dimorphic. Male: Dorsum unmarked lemon yellow except apical cells and apices of anteapical cells which are hyaline; venter varying from entirely lemon yellow (occasionally with somewhat paler areas but these not constant) to black over thorax and abdomen. Female: Extremely variable. Typical variety with ground color of head, pronotum, and scutellum milky subhyaline to milky opaque, a pair of broad vittae beginning on posterior margin of crown next inner ocular margins and diverging over disc of pronotum to its hind margin, a broad vitta bordering the commissural margin from pronotum to apex of clavus, a broad vitta in corium beginning opposite apex of scutellum, extending parallel to claval suture almost to crossveins, and a broad vitta along anterior wing margin from base to apical cells, pale yellow to red, venter varying from pale yellow to black. Variety *discicollis* (Herrich-Schaeffer) with ground color of crown and pronotum sordid white, a broad median dark vitta beginning on disc of crown and extending with divergent lateral margins over pronotal disc and over entire scutellum, the last with transverse sulcus and a short narrow marking along each lateral margin jet black; forewing subhyaline usually with some indication of the longitudinal vittae of the typical variety, with a variable transverse broad stripe

near midlength of wing; face and venter entirely pale. Variety *diluta* Ribaut differing from typical form in forewing coloration in that commissural vitta is wanting, as is the subcostal vitta occasionally;

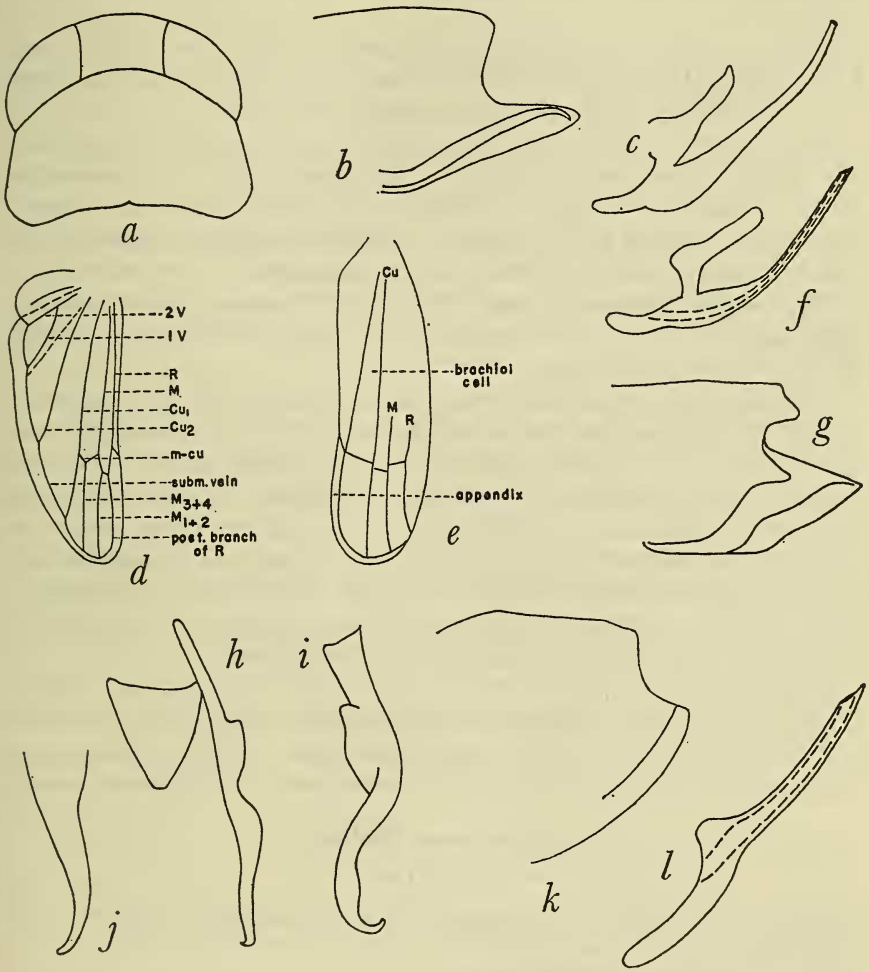

FIGURE 1.—*Alebra. a–c, A. albostriella: a,* anterior dorsum; *b,* pygofer, lateral aspect; *c,* aedeagus, lateral aspect. *d–i, A. aurea: d,* hind wing; e, forewing; *f,* aedeagus, lateral aspect; *g,* pygofer, lateral aspect; *h,* style and connective, ventral aspect; *i,* style, lateral aspect. *j–l, A. fumida: j,* style, apical portion, lateral aspect; *k,* pygofer, lateral aspect; *l,* aedeagus, lateral aspect.

all vittae yellow (based on original description). Variety *viridis* Rey (according to Ribaut's 1936 description) differs from the typical variety in that the white band of the clavus is narrower, and with its outer margin parallel to claval suture. to which it extends in some speci-

mens. In the original description, Rey merely stated that the stripes were green instead of yellow or orange. Variety *dufouri* Ribaut was described originally from two females which were dark brown from crown to apical half of forewings, except the basal angles of the pronotum.

The type of *A. albostriella* var. *insignita* McAtee (in USNM) has been examined. It agrees well with descriptions of the typical variety given by Ribaut (1936) and Ossiannilsson (1946, 106).

Ribaut (1936, p. 197) distinguishes a second European species, without genital characters, as *wahlbergi* (Boheman, 1845), but specimens studied from Zircz, Hungary, from Rijswijck, Holland, and Bucharest, Rumania appear to be intermediate in character, and it seems advisable to relegate *wahlbergi* (Boheman) to synonymy in view of this.

The original description states that both sexes are striped, but no males have been found to be marked like females of the typical variety in the course of this study.

American authors for many years have identified the common widespread North American species as *albostriella*, and the author followed this course in a recent publication (Young, 1952, p. 30), although constant differences in male genitalia were noted. Further study has led to the conclusion that the common North American species is distinct (see *Alebra aurea* (Walsh), below). The true *albostriella* has been taken in Washington, D. C., by Dr. E. D. Ball and Dr. O. Heidemann, and in the Arnold Arboretum, Boston, Mass., by Dr. Harold Morrison. Possibly the species has been introduced.

Ribaut (1936, pp. 195, 197) lists oak, elm, birch, alder, maple, linden, walnut and hawthorn as food plants. One of the specimens taken in Washington, D. C., was taken from hickory. The single specimen from the Arnold Arboretum was swept from *Physocarpus* sp.

Alebra aurea (Walsh)

FIGURE 1,*d–i*

Typhlocyba aurea Walsh, Prairie Farmer, vol. 10, new ser., p. 149, 1862.
Typhlocyba binotata Walsh, loc. cit.
Typhlocyba pallidula Walsh, loc. cit.
Typhlocyba aurata Gillette, Proc. U. S. Nat. Mus., vol. 20, p. 713, 1898. [err. pro *aurea* Walsh], new synonymy.
Alebra albostriella var. *rubrafrons* DeLong, Ohio Journ. Sci., vol. 18, p. 240, 1918, new synonymy.
Alebra bicincta DeLong, loc. cit., new synonymy.
?*Alebra eburnea* DeLong, op. cit., p. 241, new synonymy.
Alebra albostriella var. *tincta* McAtee, Journ. New York Ent. Soc., vol. 34, p. 143, 1926, new synonymy.
Alebra albostriella var. *agresta* McAtee, op. cit., p. 144, new synonymy.
?*Alebra albostriella* var. *albostriella;* McAtee (in part), loc. cit., new synonymy.
Alebra albostriella var. *fulveola;* McAtee, loc. cit., new synonymy.

Alebra albostriella var. *scopa* McAtee, op. cit., p. 145, new synonymy.
Alebra albostriella var. *discicollis;* McAtee, op. cit., p. 146, new synonymy.
Alebra albostriella; American authors nec Fallén, new synonymy.

Length of male 3.3–4.2 mm., of female 3.7–4.4 mm. Male pygofer, in lateral aspect with posterodorsal portion produced posteriorly forming a short dorsal lobe, forming with the more ventral longer lobe, a distinct notch. Aedeagus in lateral aspect with shaft smoothly curved, not bisinuate. Other characters as in *A. albostriella* (Fallén).

Color variable. Male: Typical variety as described above for *Alebra albostriella* (Fallén), but with the yellow color of the forewings frequently entirely filling the anteapical cells and occasionally tinted with orange. Variety *rubrafrons* DeLong with coloration like typical variety but with crown, clypeus and clypellus pink to red. In variety *pallidula* Walsh (sens. McAtee), markings are chiefly lacking, with the forewing apices occasionally fumose (the original description also included specimens with pale yellow vittae on commissural and costal margins). In the holotype of var. *tincta* (McAtee) the apex of the forewing from slightly in front of cross veins to wing apex is covered by a transverse smoky band. The pygofer is as described above. Female: Variety *pallidula* (Walsh) with coloration as discussed under the male variety of this (above). Variety *binotata* (Walsh) with two transverse dark submarginal spots near anterior margin of pronotum. Variety *bicincta* DeLong with two broad transverse dark bands on forewings, the anterior one beginning opposite apex of scutellum and extending to midlength of commissural margin of clavus, the posterior one from apices of anteapical cells to wing apex. Variety *agresta* McAtee with a pale yellow vitta along anterior margin, fading out near midlength of wing, and a second similarly colored vitta along commissural margin to cross veins; pronotum occasionally with a broad median pale yellow vitta.

This species is undoubtedly more widespread than the collections at hand indicate. Specimens have been examined from Ontario, Massachusetts, New York, Maryland, District of Columbia, Virginia, Kentucky, Wisconsin, Missouri, and Kansas. Tennessee should be added to the list because it has the type localities for some of DeLong's varieties.

Specimens have been collected from maple, linden, oak, chestnut, sycamore, dogwood, and elm. The species was abundant on the campus of the University of Louisville in a group of elms, many of which were dying from phloem necrosis.

Some of the specimens placed in var. *pallidula* Walsh by McAtee are teneral. DeLong's *eburnea* was placed in synonymy with *pallidula* Walsh by McAtee (1926, p. 143) and from the original description that disposition appears correct. The type of *eburnea* had darker

longitudinal lines on the pronotum, however, according to the original description.

Variety *agresta* McAtee appears to represent the commonest coloration of the female. McAtee's paratype series of this variety contains a number of females and two males, one of which is a monstrosity, the other a specimen with male genitalia like those described below for *Alebra fumida*, but containing a dorilaid parasite. It seems advisable, at present, to consider var. *agresta* McAtee to apply only to females.

The variety treated by McAtee (1926, pp. 143, 144) as var. *albostriella* probably does not occur in this species, although this cannot be certified until female specific characters have been found. Red-striped females are completely unknown in North America for any species in the genus.

The variety which McAtee (1926, pp. 143, 144) interpreted as var. *fulveola* (Herrich-Schaeffer) appears to be typical *aurea* (Walsh).

The type of *A. albostriella* var. *scopa* McAtee, a female, has been examined. It appears to be a poorly colored specimen, perhaps teneral, of this common North American species. The dark spot on the base of the scutellum does not appear well-defined, and probably is not integumental.

The variety McAtee assigned to var. *discicollis* (Herrich-Schaeffer) is represented, in the specimens examined, only by a good series of females from Washington, D. C., and from surburban Virginia. Oman collected a copulating pair on *Acer campestre*. The male has a pygofer typical for this species. The color variety does appear to be the analogue of *Alebra albostriella* var. *discicollis* (Herrich-Schaeffer). With the elevation of *aurea* to specific rank, this variety is left nameless. There seems to be no point in adding one more to an already overbundant group of varietal names.

The form McAtee treated as *fumida* Gillette is a good species, based upon an examination of the genitalia of Gillette's type. A pair of specimens taken by the writer in Louisville, Ky., had similar coloration, but the aedeagus of the male and the style apex is like typical *aurea*. The pygofer of the Kentucky specimen, unfortunately, has been lost. A series taken on *Crataegus* in Prince Edward County, Ontario, is colored as in *fumida*, but the male genitalia present only minor differences from *aurea* as interpreted here.

Alebra fumida Gillette

FIGURE 1, *j–l*

Alebra fumida Gillette, Proc. U. S. Nat. Mus. vol. 20, p. 714, 1898.
Alebra albostriella var. *fumida;* McAtee (part?), Journ. New York Ent. Soc., vol. 34, p. 145, 1926.

Length of male 3.2–4.2 mm., of female 3.6–4.2 mm. Male pygofer in lateral aspect with posterodorsal portion broadly, shallowly concave, both lobes on posterior pygofer margin markedly shorter than in *A. aurea* (Walsh). Styles not expanded anteapically as in *A. albostriella* (Fallén), gradually tapering to acute decurved apices. Connective shallowly V-shaped, style base not or only slightly extended cephalad from articulation with connective. Other characters as in *A. albostriella* (Fallén).

Variable, both sexes from entirely yellowish white to darker. Darker males either with crown yellow, pronotum and scutellum light gray, the latter with brown basal angles, forewings translucent with commissural margin, claval suture, and corial streak parallel to claval suture narrowly yellow, or (type) with crown sordid brown, pronotum and scutellum much darker brown, forewing except costal plaque entirely smoky translucent with the apical cells slightly darker. Darker females with crown pale yellow to brownish yellow, pronotum brownish yellow to pale brown, a lighter spot near midlength of each lateral margin, scutellum dark brown, forewing yellowish hyaline, claval region suffused with light brown, apical cells fumose.

Specimens are at hand from New York, Wisconsin, Kansas, Iowa, and Illinois (males from Wisconsin and New York).

This species, with distinct morphological characters, cannot be separated, on the basis of color alone, from *aurea* (q. v. for discussion of darker specimens from Kentucky and Canada).

Genus *Orsalebra* Young

FIGURE 2

Orsalebra Young, Univ. Kansas Sci. Bull. 35, p. 23, 1952 (type *Orsalebra robusta* Young by original designation).

Hind wing with submarginal vein extending around wing apex, distinct from apical margin, continued beyond apex of posterior branch of R along costal margin towards base of wing, becoming evanescent near midlength of costal margin; posterior branch of R entire apically; vein Cu_2 attaining submarginal vein at point opposite vein m-cu. Forewing with appendix extending around wing apex; bases of first, second, and third apical cells rectilinear, these cells successively shorter towards costal margin; outer apical cell open at base; first and second apical cells with lateral margins subparallel; third apical cell broader apically than at base. Female seventh sternum with hind margin produced, regularly convex. Male plates greatly exceeding posterior pygofer margin, broad basally, each plate abruptly narrowed in apical third, with apex broadly rounded; disc with multiseriate short macrosetae in basal two-thirds, becoming uniseriate in apical third and extending to apex. Pygofer with mid-

posterior margin produced and forming a subquadrate thickened short apical process; macrosetae multiseriate, submarginal near posterodorsal margin; pygofer wall with an oblique thickened integumental rod. Ninth tergum without a tergite or a differentially sclerotized area. Style elongate, with small distinct dorsal preapical lobe and short apical extension directed ventrad. Connective U-shaped, vertical. Aedeagus asymmetrical with preatrium elongate, dorsal apodeme well developed, more than half length of shaft, shaft with anteapical processes and processes near midlength. Sternal abdominal apodemes vestigial. Head with anterior margin broadly rounded, posterior margin parallel to anterior; ocelli on broadly rounded margin between crown and face, closer to median line of head than to eyes. Pronotum much longer than head, its width subequal to width of head including eyes, lateral margins short, strongly divergent posteriorly. Face flat in lateral aspect.

Known only from the genotype, from Ecuador. At present, *Orsalebra* is believed to be not closely related to other alebrine genera. The venation of the hind wing, with the submarginal vein extending beyond the apex of the posterior branch of vein R thence basad along the costal margin (this sector of the submarginal vein which probably represents the preservation of one of the more anterior branches of vein R, is unknown elsewhere in the Alebrini, and is suggestive of the Dikraneurini). The form of the head, enclosing a great portion of the anterior pronotal margin is also a unique feature in the tribe. In the hind wing the confluence of vein Cu_2 with the submarginal vein opposite vein m-cu is an unusual character, but it occurs also in *Alebra*, and the condition is approached in the genus *Trypanalebra*. The occurrence in the forewing of an appendix that extends around the wing apex is found elsewhere in the tribe only in *Alebra* and in *Diceratalebra interrogata* (Knull).

Orsalebra robusta Young

FIGURE 2

Orsalebra robusta Young, Univ. Kansas Sci. Bull. 35, p. 24, 1924.

Length of male 4.6 mm., of female 4.5 mm. Crown with median length less than half interocular width and about one-third median length of pronotum. Aedeagus with pair of once-branched processes slightly distad of midlength, each process bearing small projections and appearing somewhat pectinate; with three retrorse anteapical processes on cephalic surface near apex; apex a laterally compressed decurved lobe.

Ground color of dorsum yellowish white, a spot around each ocellus and basal angles of scutellum pale orange; three longitudinal vittae on pronotum, apex of scutellum and vitta within claval suture bright

orange. Forewing with vein Cu bright (holotype) or pale orange; claval apex and small portion of adjoining appendix deep black; brachial cell apically and apical cells, fumose. Face with suggestion of two yellow markings at base; remainder of venter stramineous except dark tarsal claws.

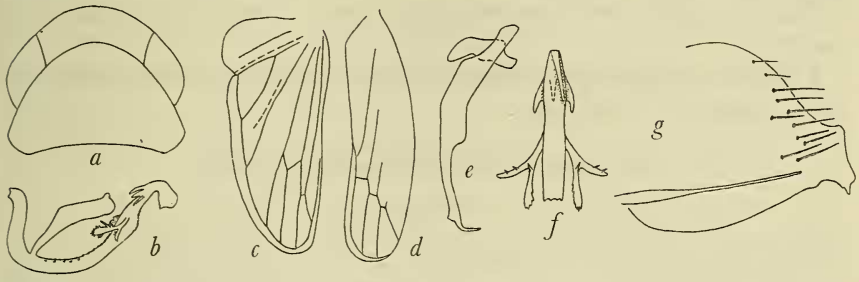

FIGURE 2.—*Orsalebra robusta: a*, anterior dorsum of female allotype; *b*, aedeagus, lateral aspect; *c*, hind wing; *d*, forewing; *e*, style and connective, lateral aspect; *f*, aedeagus, apex, caudal aspect; *g*, pygofer, lateral aspect.

This species is known only from the holotype and allotype, from Hacienda Talahua, Bolívar, Ecuador (F. M. and H. H. Brown), in the Snow Entromological Collections.

Albera, new genus

FIGURE 3

Type of the genus, *Protalebra picea* Osborn.

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein at point basad of vein m-cu. Forewing with appendix not extending around apex; inner apical cell only slightly broader at base than in apical half; second apical cell slender, elongate, parallel-sided; third apical cell elongate, triangular; outer apical cell elongate, triangular, much longer than broad, not attaining apical wing margin, its base distinctly proximad of base of third apical cell. Male plates elongate, greatly exceeding posterior pygofer margin, each with a single row of macrosetae from near base to apex. Pygofer with posterior margin strongly produced, macrosetae in an anteapical vertical row; process arising at apex of pygofer. Ninth tergum without a tergite or heavily sclerotized area. Anal tube with unpaired median and paired lateral processes. Style elongate, slender, preapical lobe weak. Connective Y-shaped with the unpaired portion broad. Aedeagus with preatrium absent; dorsal apodeme saddle-shaped; shaft simple, without processes. Sternal abdominal apodemes traversing one conjunctiva. Head strongly produced, crown

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with median length exceeding interocular width; ocelli on broad margin between crown and face, equidistant from inner eye margins and median line of head. Pronotum longer than head, wider than head including eyes; lateral margins weakly divergent posteriorly. Face convex in lateral aspect.

Known only from the genotype, from Brazil, Venezuela, and Panama.

The three anal processes serve to set this genus apart from all other known genera of Alebrini.

Albera picea (Osborn), new combination

FIGURE 3

Protalebra picea Osborn, Ann. Carnegie Mus. Vol. 18, p. 265, 1928.

Length of male 2.8 mm., of female 2.8–3.0 mm. Crown with anterior margin broadly rounded, disc convex; median length almost one-half greater than interocular width. Pronotum with median length less than twice median length of crown. Female seventh sternum subtriangular, sinuate on each side of a pronounced lobate

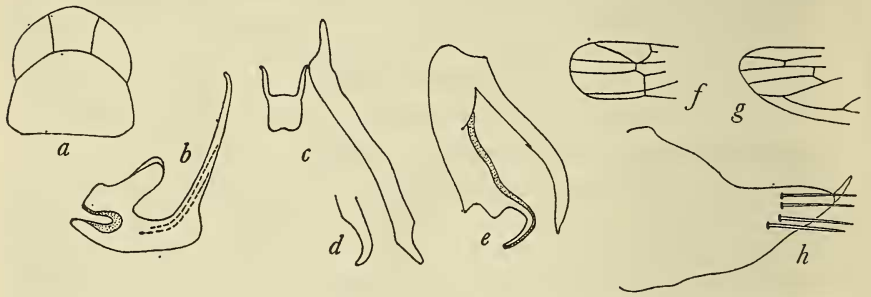

FIGURE 3.—*Albera picea: a*, anterior dorsum; *b*, aedeagus, lateral aspect; *c*, style and connective, dorsal aspect; *d*, style apex, lateral aspect; *e*, anal processes, lateral aspect; *f*, apex of forewing; *g*, apex of hind wing; *h*, pygofer, lateral aspect.

median posterior projection; pygofer with weak macrosetae near and parallel to ovipositor from near base to apex. Male pygofer with a weakly sclerotized apical process directed caudomesad, not attaining midline. Style with apical narrowed portion decurved; aedeagus with dorsal apodeme laterally compressed, narrower at base than at apex; shaft abruptly narrowed on ventral margin in basal third; gonopore near midlength of caudal margin. Anal tube with a pair of lateral decurved hooks and a large unpaired median lanceolate process, all heavily sclerotized.

Crown ivory suffused with tan, with a longitudinal black stripe on each side extending from near base of crown to an anteapical paler

ocellus-like spot spot for which it forms a border. Pronotum pitch-black. Scutellum dark brown, shining, the apical third ivory. Forewing translucent shining brown; clavus with basal triangular and apical trapezoidal transcommissural spots ivory, the latter extending slightly into the brachial cell of each wing, and a quadrate transcommissural spot behind middle, ivory anteriorly, hyaline posteriorly; corium with four translucent wedge-shaped spots along middle half of costal margin, the third suffused with ivory. Face stramineous, a narrow rim around ocelli, except laterally, and a triangular vitta extending ventrad and mesad from the anteroventral corner of each eye, black. Pleural portion of pronotum pitch-black; thoracic pleura dark brown. Hind leg with apex of femur and apical tarsomere dark brown; middle leg with apical tarsomere dark brown; foreleg variable, from unmarked yellow to yellow with a transverse marking on each femur, and entire tibia and tarsus, black. Remainder pale beneath except female pygofer and ovipositor which are pitch-black.

The type, a female from Fort Principe, Rio Guaporé, Brazil, is in the Carnegie Museum collection. Additional specimens have been examined from Aguadulce, Coclé Province, and Garachiné, Darién Province, Panama, and from Barinas, Venezuela.

This peculiar species has the facies of *Xestocephalus*, but appears properly placed in the Alebrini.

Genus *Paralebra* McAtee

Figures 4, 5

Protalebra subgenus *Paralebra* McAtee, Journ. New York Ent. Soc., vol. 34, pp. 147, 151, 1926 (type *Protalebra similis* Baker by original designation).

Protalebra subgenus *Plagalebra* McAtee, op. cit., pp. 147, 151 (type *Protalebra singularis* Baker by original designation).

Protalebra subgenus *Kallebra* McAtee, op. cit., p. 152 (type *Protalebra ninettae* Baker by original designation) new synonymy.

Paralebra; Young, Univ. Kansas Sci. Bull. 35, p. 28, 1952.

Kallebra; Young, op. cit., p. 22

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R evanescent or not apically; vein Cu_2 confluent with submarginal vein at point proximad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell usually broader at base than at apex; second apical cell parallel-sided; third apical cell stalked; outer apical cell variable in shape, short, not attaining apical wing margin. Male plates elongate, triangular, each with a longitudinal group of macrosetae parallel to lateral margin. Pygofer with posterior margin produced or truncate; macrosetae in vertical irregular row on disc; processes arising ventrally. Ninth tergum differentially sclerotized with or without lines of flection. Anal processes present or absent.

Style variable interspecifically, with or without preapical lobe. Connective membranous. Aedeagus with a pair of conspicuous processes arising near base; preatrium present or absent; dorsal apodeme distinct or greatly reduced. Sternal abdominal apodemes traversing first conjunctiva. Head moderately to strongly produced, crown with apex rounded or angular, median length equal to or exceeding interocular width; ocelli about equidistant from inner eye margins and median line of head. Pronotum with median length equal to or exceeding that of crown, as wide as or wider than head including eyes, lateral margins varying interspecifically from slightly to strongly divergent posteriorly. Face from slightly concave to strongly convex in lateral aspect.

Distribution: Mexico, Central and South America, and West Indies.

Paralebra can be separated from other genera in the group with a membranous connective in the male by its lack of an unpaired aedeagal process.

Key to species of *Paralebra*

1. Crown with conspicuous black spot at apex; forewing with inner apical cell not conspicuously broader at base than at apex; ocelli slightly above margin between crown and face . . . . . **ninettae** (Baker)
   Crown marked otherwise; forewing with inner apical cell much broader at base than at apex; ocelli slightly below margin between crown and face . . 2
2. Crown without a cruciate pale marking, median length about equal to interocular width; total length of insect less than 3 mm. 3
   Crown with a cruciate pale marking, median length one-third greater than interocular width; total length of insect 3 mm. or more 4
3. Aedeagus with atrial processes extending directly caudad; male pygofer with ventral process inconspicuous and not strongly curved apically. **similis** (Baker)
   Aedeagus with atrial processes appearing looped, extending dorsad thence caudad; male pygofer with ventral process conspicuous and strongly curved apically . . . . . **keiferi,** new species
4. Male with ventral pygofer process conspicuous, hook-shaped; aedeagal shaft smoothly curved . . . . . **decurvata,** new species
   Male with ventral pygofer process minute, not hooked; aedeagal shaft bisinuate . . . . . **singularis** (Baker)

***Paralebra similis* (Baker)**

FIGURE 4,*a–e*

Protalebra similis Baker, Psyche, vol. 8, supplement, p. 403, 1899.

Protalebra (*Paralebra*) *similis* McAtee, Journ. New York Ent. Soc., vol. 34, p. 151, 1926.

Paralebra similis; Young, Univ. Kansas Sci. Bull. 35, p. 29, 1952.

Length of male 2.6–2.8 (type) mm., of female 2.7 mm. Crown with median length equal to interocular width and slightly less than length of pronotum; disc flat; width of head including eyes equal to

width of pronotum or slightly less. Ocelli slightly below margin between crown and face. Pronotum with lateral margins slightly divergent posteriorly. Face almost flat in profile. Hind wing with posterior branch of vein R entire apically. Female seventh sternum with median keel, posterior margin rectilinear; pygofer with few dispersed pale macrosetae on apical half near ovipositor. Male plates exceeding posterior pygofer margin, each with a single row of macrosetae from near base almost to apex. Male pygofer truncate apically (not always obviously so in lateral aspect, but if not then distinctly so in ventrolateral aspect); ventral portion with a distinct lobe (resulting from inrolling of ventral margin) or not; ventral portion with a short inconspicuous process. Ninth tergum with a heavily sclerotized transverse bar, without distinct lines of flection laterally. Anal processes absent. Style elongate, slender, without preapical lobe, rounded at apex, apical portion slightly decurved. Aedeagus with preatrium short, slender; dorsal apodeme paired, the arms short, extending caudodorsad; atrium V-shaped in cephalic aspect, with a process arising dorsally on each side, expanded in apical half, thence gradually tapered to acute apex which exceeds apex of shaft; shaft arising dorsally in atrium, funnel-shaped, the basal half from broadly to slightly expanded on dorsal margin, a variable portion of apical half curved dorsad (extreme apex in type, considerably more in some other specimens examined); gonopore terminal.

Ground color of crown and pronotum dull orange, crown fading anteriorly to a narrow submarginal ivory area, posterior margin of pronotum olive, separated from disc by a sharp black line. Scutellum dull yellow, the transverse sulcus, a triangular spot at midlength of lateral margin, and apex, black. Forewing with ground color olive, an elongate inverted U-shaped marking in basal half of clavus connecting posteriorly with a broader oblique vitta extending from commissure posterolaterad over half width of corium, a longitudinal vitta in apical third of clavus, the claval suture narrowly in basal half, broadly in apical third, a broad submarginal streak parallel to anterior wing margin over basal two-thirds, interrupted by costal plaque, a dash at midlength of cell R, apical portions of cells R and M and apical cells except areoles in second and fourth apical cells, black; a longitudinal vitta at base in corium next claval suture, a diagonal vitta behind coextensive with and parallel to the black oblique claval vitta, an areole in apex of cell R, and one in outer apical cell and apical veins, white; second apical cell with a hyaline areole. Face black, a narrow transverse basal line, through ocelli, and apex of clypellus, ivory. Legs pale, middle tarsus with a single band, hind tarsus with two bands, a broad femoral and tibial band on each hind leg, black, remainer of venter black.

The type, in the U. S. National Museum, bears the label "Corumba" [Brazil] and "May." The original description stated that the specimen was collected in April. Specimens with no consistent morphological differences have been observed from Panama, British Honduras, Venezuela, Haiti, and the Dominican Republic. Puerto Rico should be added to this range, because Caldwell (1952) illustrated a male.

***Paralebra keiferi*, new species**

FIGURE 4,*f–h*

Length as in *P. similis* (Baker). Crown with median length slightly exceeding interocular width and four-fifths median length of pronotum; disc flat; width of head including eyes slightly less than width of pronotum. Lateral margins of pronotum, ocelli, face, female pygofer and seventh sternum, and male plates as in *similis*. Male pygofer with posterior margin broadly rounded; pygofer processes arising ventrally, each with apex hooked dorsad in lateral aspect. Ninth tergum as in *similis*. Anal processes absent. Style similar to that of *similis*. Aedeagus with preatrium and dorsal apodemes absent, with a pair of dorsal atrial processes extending slightly cephalad at their bases, thence curved sharply caudad, each process aciculate; shaft slightly expanded on dorsal margin near midlength, much shorter and broader than in *similis*, apex curved dorsad; gonopore terminal.

Color similar to *similis* but with an additional transverse white streak on face extending between antennal bases, and with an additional transverse black stripe on disc of pronotum, not attaining lateral pronotal margins.

Holotype male, allotype female and long series of paratypes of both sexes, Socorro Island, in the Revilla Gigedo group, 2,000 ft., May 8, 1925 (H. H. Keifer), in California Academy of Sciences collection. Male and female paratypes in U. S. National Museum.

***Paralebra ninettae* (Baker), new combination**

FIGURE 4,*i–l*

Protalebra ninettae Baker, Psyche, vol. 8, p. 403, 1899.
Protalebra (*Kallebra*) *ninettae;* McAtee, Journ. New York Ent. Soc., vol. 34, p. 152, 1926.
Kallebra ninettae; Young, Univ. Kansas Sci. Bull. 35, p. 23, 1952.

Length of male 2.8 mm. Crown with median length almost one-half greater than interocular width and about three-fourths of median length of pronotum; disc convex; width of head including eyes less than width of pronotum. Ocelli slightly above margin between crown and face. Pronotum with lateral margins strongly divergent posteriorly.

Face in profile, and posterior branch of vein R of hind wing as in *P. similis* (Baker). Male plates exceeding posterior pygofer margin, each with a single row of macrosetae in apical two-thirds. Male pygofer with posterior margin regularly convex; pygofer process arising on ventral margin, short, inconspicuous. Ninth tergum as in

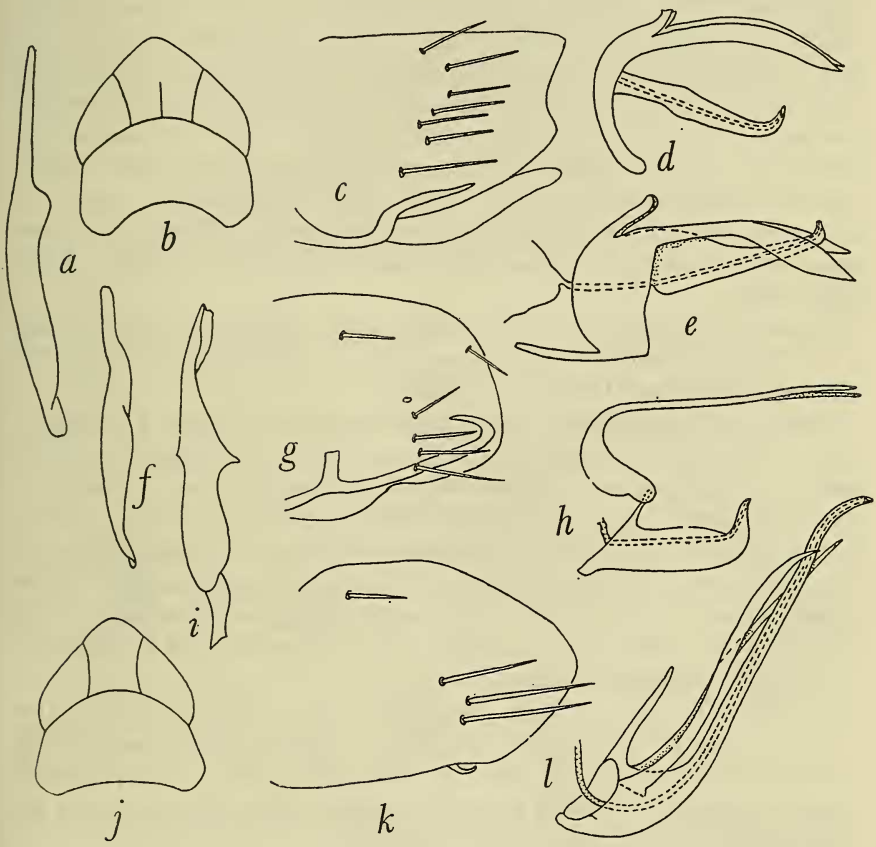

FIGURE 4.—*Paralebra*. *a–e*, *P. similis*: *a*, style, ventral aspect (type); *b*, anterior dorsum (type); *c*, pygofer, lateral aspect (type); *d*, aedeagus, lateral aspect (specimen from Garachine, Panama); *e*, aedeagus, lateral aspect (type). *f–h*, *P. keiferi*: *f*, style, ventral aspect; *g*, pygofer, lateral aspect; *h*, aedeagus, lateral aspect. *i–l*, *P. ninettae* (type): *i*, style, ventral aspect; *j*, anterior dorsum; *k*, pygofer, lateral aspect; *l*, aedeagus, lateral aspect.

similis. Anal processes absent. Style with preapical lobe, apical extension curved caudoventrad, the tip obliquely truncate in ventral aspect. Aedeagus with preatrium absent: dorsal apodeme well developed, unpaired, triangular in cephalic aspect; shaft elongate, slender, curved slightly caudad at apex with a pair of processes arising dorsally at base and extending to apical fifth of shaft, acute apically; gonopore terminal.

Crown white with a conspicuous apical black spot. Pronotum dark orange with an M-shaped black vitta on posterior half of disc, enclosing a more anterior V-shaped pale marking which in turn encloses a small black triangle situated in middle of disc. Scutellum with basal angles broadly orange, median line on basal half and extreme tip, black, anteapical portion broadly white. Basal half of clavus and adjoining corium striped with olive green and dark, a spot at base of corium, the costal plaque, a spot at apex of claval cell and a transverse dash from commissure through brachial cell, white, the last bordered anteriorly with dark; ground color of apical half of forewing smoky subhyaline, the veins olive green except those bordering outer apical cell which are dark. Face pale dorsally except a large spot beneath each ocellus, crimson in ventral half except narrow pale lateral margins of genae; basal antennal segment black. Legs pale yellow.

Known only from the type, a male from Chapada, Brazil, in the U. S. National Museum collection, and a male specimen from Río Tabasara, Chiriquí Province, Panama.

In my 1952 paper I stated that the style did not possess a preapical lobe. This was erroneous, for the lobe is distinct, but small. I erred also in stating that aedeagal processes arose from the dorsal apodeme. They arise from the base of the shaft near the dorsal apodeme. Third, with only the type at hand, I duplicated McAtee's erroneous observation that a cell of the forewing was absent in the apical series. More careful observation reveals a very small triangular third apical cell near the wing margin in the type. The third apical cell is very distinct in the Panama specimen.

Paralebra ninettae is easily separable from other species in the genus by external features as set forth in the key. The presence of the preapical lobe of the style is distinctive also, and the entire posterior branch of vein R in the hind wing will separate it from all other species of the genus except *similis*.

***Paralebra singularis* (Baker)**

FIGURE 5,*a*,*b*

Protalebra singularis Baker, Psyche, vol. 8, supplement, p. 402, 1899.
Protalebra (*Plagalebra*) *singularis;* McAtee, Journ. New York Ent. Soc., vol. 34, p. 151, 1926.
Paralebra singularis; Young, Univ. Kansas Sci. Bull. 35, p. 29, 1952.

Length of both sexes, 3.8 mm. Crown with median length more than one-third greater than interocular width, and equal to length of pronotum; disc concave; width of head including eyes less than width of pronotum. Ocelli as in *P. similis* (Baker). Pronotum with lateral margins strongly divergent posteriorly. Face flat in profile. Forewing

with two discal cells delimited by supernumerary cross veins. Hind wing with posterior branch of vein R evanescent apically. Female seventh sternum very slightly produced posteriorly at middle, the apex obtusely angulate. Male plates not attaining posterior pygofer margin, each with a single row of macrosetae on middle half. Male pygofer produced and regularly convex apically; ventral pygofer process inconspicuous, short; dorsal process arising in basal half of dorsal margin, extending ventrad beyond middle of pygofer disc. Ninth tergum as in *similis* but with distinct lines of flection laterally.

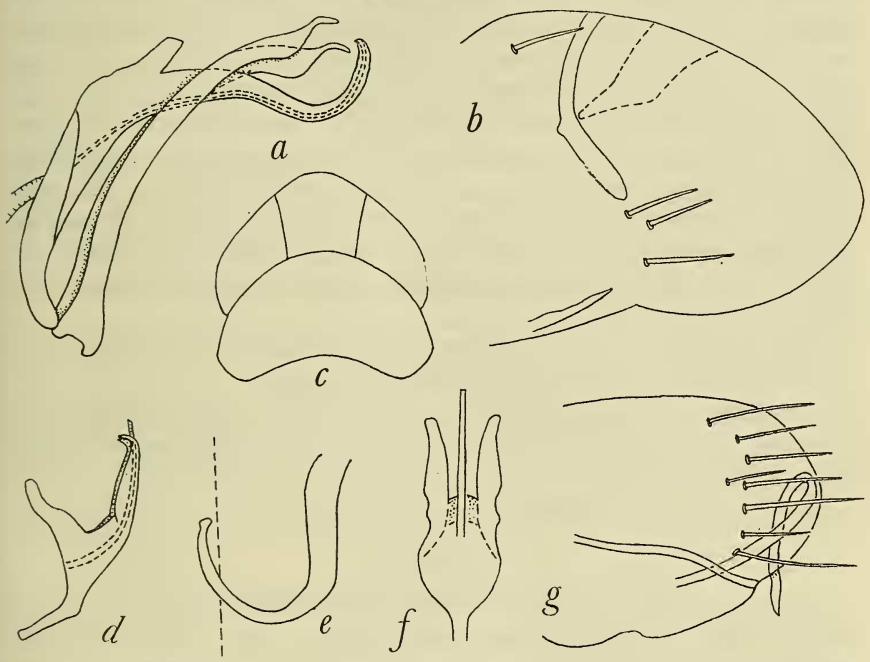

FIGURE 5.—*Paralebra*. *a–b*, *P. singularis: a*, aedeagus, lateral aspect; *b*, pygofer, lateral aspect (broken line represents anal process). *c–g*, *P. decurvata: c*, anterior dorsum; *d*, aedeagus, lateral aspect; *e*, pygofer process, caudal aspect (median line broken); *f*, aedeagus, ventral aspect; *g*, pygofer, lateral aspect.

Anal processes distinct, short, triangular. Style elongate, slender, with ventral preapical lobe, apex slightly decurved. Aedeagus with preatrium absent; atrium omega-shaped in cephalic aspect, the closed dorsal portion forming the dorsal apodeme, with a process arising at base on each side, extending caudodorsad in a gentle arch, as long as shaft, bisinuate and narrowed at apex with tip decurved; shaft funnel-shaped, bisinuate, the apex directed dorsad; gonopore terminal.

Crown with ground color dark orange with a dull ivory cruciate

marking, the cross-piece attaining the lateral margins just anterior to eyes. Pronotum as in *similis* but with a node at middle of transverse black marking. Scutellum orange to yellow, a spot along each lateral margin opposite end of transverse sulcus, and apex of scutellum, black. Forewing with entire clavus and basal half of corium except two large paler spots near base of latter, orange mottled with small paler spots, an arcuate vitta beginning at midlength of commissural margin of clavus and extending caudolaterad, broadened apically and ending on costal margin, translucent gray, the broadened apical portion occasionally (type) pale yellow and opaque, the vitta not (type) or only faintly margined with brown in its claval portion; outer apical and outer anteapical cells hyaline, their veins bordered with dark; inner anteapical cell and remaining apical cells smoky, the apices of the first and second traversed by short narrow pale vitta. Face dull gray (type) to pale yellow, a dark-margined pale transverse vitta extending from eye to eye through ocelli, clypellus, lora and portion of adjacent genae darker. Prosternal region dark, remainder of thoracic venter gray, abdomen paler gray, female seventh sternum dark-tipped. Female pygofer grayish brown. Legs pale, hind tarsi with two black annuli.

This species is known only from the type and two paratypes, from Chapada, Brazil, in the U. S. National Museum.

In addition to the characters in the key, the distinctive shape of the aedeagal processes will serve to separate this from other species in the genus.

***Paralebra decurvata*, new species**

FIGURE 5,*c–g*

Length of male, 3.0 mm. Crown with median length one-third greater than interocular width and slightly more than two-thirds length of pronotum; disc convex; width of head including eyes less than width of pronotum. Ocelli as in *P. similis* (Baker). Pronotum with lateral margins strongly divergent posteriorly. Face convex in profile. Hind wing with posterior branch of vein R entire apically. Male plates exceeding posterior pygofer margin, setae as in *P. singularis* (Baker); pygofer with posterior margin regularly convex; a process arising on each side below middle of disc, extending across midline and decurved in caudal aspect, rounded apically; a rod-like process consisting of differentially sclerotized portion of pygofer wall extending horizontally across disc. Ninth tergite triangular, bounded laterally and apically by rod-like heavily sclerotized lines. Anal processes absent. Style slender, broadest anteapically, apex decurved. Aedeagus with preatrium distinct; dorsal apodeme short, liguliform; a pair of atrial processes, broader and shorter than shaft, each gradu-

ally tapered in apical half, extending parallel to shaft, each with apex acute and curved dorsad; shaft setiform, regularly curved caudodorsad.

Ground color of crown clouded ivory. Pronotum pale yellow, with lateral margins deep and a transverse marking in middle of disc paler, orange. Scutellum dull yellow, a marginal spot on each lateral margin opposite end of sulcus, and apex, black. Forewing with basal half of clavus and adjoining portion of corium translucent marked with dull orange; remainder of forewing lacteus with a transcommissural narrow band extending from costal margin to costal margin slightly before midlength of clavus, an arcuate narrow pink line across clavus in its apical half contiguous with a similarly colored arcuate line through brachial cell, a smoky spot before apex of clavus, a broad smoky vitta extending from middle of disc of corium apicad along vein Cu, confluent with a second smoky vitta extending from costal margin beyond its midlength caudomesad through apex of cell R, the two vittae filling claval apex and apical portions of cells R, M and Cu, basal portions of first and second apical cells and most of third apical cell; apical portions of second and third apical cells narrowly smoky; apical cross-veins pale. Face and thoracic venter stramineous; pleural portion of pronotum pink; hind tibiae with outer row of setae set in black spots, and with tibial apex, apex of first tarsomere and all of apical tarsomere, black.

Holotype male, Mojinga Swamp, Panama Canal Zone, Nov. 15, 1951 (F. S. Blanton), in U. S. National Museum (No. 62674).

From other species of the genus, *decurvata* is readily recognizable by its strong, decurved male ventral pygofer processes and its setiform aedeagal shaft.

Genus *Trypanalebra* Young

FIGURE 6

Trypanalebra Young, Univ. Kansas Sci. Bull. 35, p. 27, 1952 (type *Protalebra maculata* Baker by original designation).

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein near midlength of wing, occasionally almost opposite vein m-cu. Forewing with appendix not extending around wing apex which is smoothly rounded; inner apical cell broader at base than at apex; second apical cell parallel-sided; third apical cell variable interspecifically, from sessile to triangular or petiolate. Female seventh sternum with hind margin slightly produced at middle, caudolateral angles rounded; pygofer with multiseriate pale macrosetae parallel to ovipositor. Male plates narrow, elongate, triangular, equal to or exceeding posterior pygofer margin, each with a longitudi-

nal row of macrosetae. Pygofer with hind margin produced and rounded; macrosetae in a vertical or oblique discal row; a pair of processes arising one on each side from inrolled posterior margin or from ventral margin and a weak process on each side arising from dorsal margin and extending ventrad. Ninth tegum with a narrow transverse tergite separated posteriorly and occasionally laterally by a line of flection. Anal processes absent. Style long or short, without preapical lobe. Connective membranous. Aedeagus with preatrium usually absent; dorsal apodeme unpaired, laterally compressed; a conspicuous ventral unpaired atrial process much longer than shaft which is short, directed caudodorsad and usually has a pair of processes arising at base or more distad along its length. Sternal abdominal apodemes traversing first conjunctiva. Head moderately to strongly produced; ocelli on rounded margin between crown and face. Pronotum broader than head including eyes; lateral margins strongly divergent posteriorly. Face convex in lateral aspect.

Distribution: Southwestern United States, Central America, and West Indies.

Trypanalebra is closely related to *Blarea*, in the discussion of which distinguishing characters are mentioned.

Key to species of *Trypanalebra*

1. Crown with four black spots along anterior margin; aedeagal shaft without processes . . . . . **blantoni,** new species
   Crown not so marked; aedeagal shaft with paired processes 2
2. Crown with median length greater than interocular width; forewing with cell R not in contact with all apical cells; male with pygofer process elongate, arising on ventral pygofer margin . . . . . **ziczac** (Osborn)
   Crown with median length less than interocular width; forewing with cell R in contact with all apical cells; male with pygofer process short, formed by inrolled posterior pygofer margin 3
3. Aedeagus with dorsal processes arising from shaft, greatly exceeded in length by shaft . . . . . **maculata** (Baker)
   Aedeagus with dorsal processes arising from dorsal apodeme, almost as long as shaft . . . . . **balli,** new species

Trypanalebra maculata (Baker)

FIGURE 6,*a–f*

Protalebra maculata Baker, Invertebrata Pacifica, vol. 1, p. 6, 1903.
Protalebra (*Paralebra*) *pardalis* McAtee, Journ. New York Ent. Soc., vol. 34, p. 151, 1926.
Trypanalebra maculata; Young, Univ. Kansas Sci. Bull. 35, p. 28, 1952.
Trypanalebra sp. Young, op. cit., p. 157, fig. 26.

Length of both sexes, 2.5–2.6 mm. Head moderately produced with anterior margin broadly rounded in dorsal aspect; median length of crown one-fourth less than interocular width; disc convex; ocelli

closer to eyes than to median line of head. Pronotum two-thirds longer than crown. Female seventh sternum with hind margin obtusely angulate at middle; pygofer with macrosetae sparse, occurring along posterior half of ovipositor. Male plates each with single row of macrosetae on distal two-thirds. Male pygofer with process

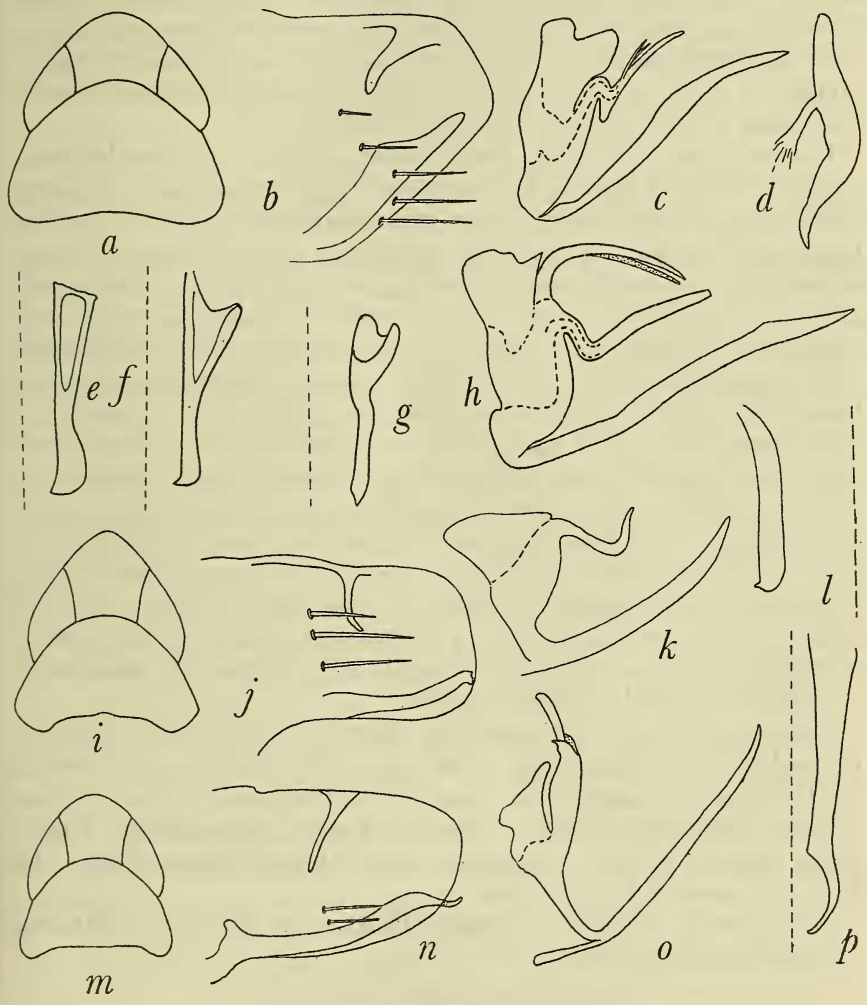

FIGURE 6.—*Trypanalebra*. *a–f*, *T. maculata: a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, aedeagus, lateral aspect; *d*, style, ventral aspect; *e*, pygofer process, caudal aspect (median line broken) (specimen from Chinandega, Nicaragua); *f*, same (specimen from Guadalajara, Mexico). *g–h*, *T. balli: g*, pygofer process, caudal aspect (median line broken); *h*, aedeagus, lateral aspect; *i–l*, *T. blantoni: i*, anterior dorsum; *j*, pygofer, lateral aspect; *k*, aedeagus, lateral aspect; *l*, pygofer process, ventral aspect; *m–p*, *T. ziczac* (allotype): *m*, anterior dorsum; *n*, pygofer, lateral aspect; *o*, aedeagus, lateral aspect; *p*, pygofer process, ventral aspect.

arising on posteroventral margin, variable in shape in lateral aspect but not exceeding posterior pygofer margin and rounded apically, in ventral aspect its apex in the shape of a pruning knife. Ninth tergite delimited laterally by a line of flection. Style short, apical portion slightly decurved, apex acute. Aedeagus with preatrium absent; dorsal apodeme bilobed; unpaired ventral process much broader than shaft which is curved abruptly ventrad bear base thence abruptly dorsad and curving slightly caudad in apical half of length, giving off a pair of short narrow inconspicuous processes in basal half, these greatly exceeded by apex of shaft.

Ground color of dorsum deep shining black, a diamond-shaped median subapical spot and a laterobasal spot on each side touching inner margin of eye on crown, a median campanulate marking bordering anterior margin, a pair of large irregularly rounded discal markings at midlength, a smaller median marking behind middle, the lateral and posterior margins of the pronotum narrowly, the basal angles narrowly and a large V-shaped marking on the scutellum, four spots in basal half, one in apical half, and a small dot in apex of clavus, three spots in basal half, a very small brachial spot near midlength, two spots opposite anteapical claval spot, a small spot contiguous to apical claval spot veins bordering apex of cell R, and extreme apex narrowly, of corium, bright yellow, three anteapical areoles along costal margin subhyaline. Face black except a transverse basal band between ocelli and continuing to ocellocular areas there surrounding a black spot on each side, and apex of clypellus and genae, yellow. Legs dull gray, a broad postfemoral and posttibial area and extreme apex of latter, dark; thorax dark; abdomen dull gray to black in male, dark in female except pale seventh sternum.

Specimens have been examined from San Marcos, Managua, Granada, and Chinandega, Nicaragua; Concepción, Guatemala; La Ceiba and Zamorano, Honduras; Pico Turquino, Cuba; Puebla, Mexico; Totalapan, Oaxaca, Mexico; Tucson, Baboquivari Mountains, Santa Catalina Mountains, and Sabino Canyon, Ariz.; Del Rio and Cameron County, Tex.

The type of *Protalebra pardalis* McAtee, in the U. S. National Museum, has been studied.

***Trypanalebra balli*, new species**

FIGURE 6,*g–h*

Length of male, 2.9 mm. Head as in *T. maculata* (Baker). Pronotum almost twice length of crown. Male plates each with single row of macrosetae over middle third; pygofer processes located as in *maculata* but more slender at apex in ventral aspect. Style as in *maculata*, but longer. Aedeagus with shaft and unpaired ventral

process much similar to *maculata;* a pair of dorsal processes arising from dorsal apodeme, much more conspicuous than in the latter species, curved caudoventrad and almost as long as shaft.

Color of dorsum as in *maculata.* Face entirely pale yellow except for two black spots on margin between crown and face, and one on each ocellocular area. Thoracic venter and legs as in genotype.

Described from a single male from Tinajas Altas, Ariz., Apr. 23, 1935 (E. D. Ball), in the U. S. National Museum (No. 62675).

***Trypanalebra blantoni*, new species**

FIGURE 6,*i–l*

Length of male 2.5 mm., of female 2.5–2.6 mm. Head strongly produced with anterior margin acutely rounded in dorsal aspect; median length of crown more than one-half greater than interocular width; disc flat or slightly concave; ocelli about equidistant from inner eye margins and median line of head. Pronotum equal to crown in length. Female seventh sternum with posterior margin regularly convex; pygofer with macrosetae more closely spaced than in *T. maculata* (Baker), occurring along posterior two-thirds of length of ovipositor. Male plates with row of macrosetae extending from near base almost to apex. Male pygofer with process arising along ventral margin, the two processes subparallel, extending caudad but not exceeding posterior pygofer margin, each with apex rounded and with small lateroventral subapical projection. Ninth tergum delimited posteriorly, but not laterally, by a line of flection. Style as in *maculata.* Aedeagus with preatrium absent; dorsal apodeme convex dorsally, not lobed; unpaired ventral process much broader than shaft which is broadly U-shaped in lateral aspect; shaft processes absent.

Crown ivory with four black spots along anterior margin and a pair of indistinct laterobasal pale yellow spots, one next inner margin of each eye. Pronotum yellow, bordered with white posteriorly, with a black dash along the anterior margin of the white border on each side, each humeral margin with a dark spot. Scutellum with basal angles yellow with a median longitudinal dark mark between them; apical half ivory; transverse sulcus, a spot on each lateral margin at midlength and apex, black. Forewing olive green striped with fuscous in basal half, smoky with pale veins in apical half; a small spot in corium near base of claval suture, a large spot along costa including plaque, inner apical cell, and an arcuate transcommissural marking extending through apical half of clavus and through brachial cell, lacteus, partly bordered with black or fuscous; third apical cell black. Face and venter pale.

Holotype and paratype males from Las Tablas, Los Santos Province, Panama, and male paratype from El Real, Darién Province, Panama,

in U. S. National Museum (No. 62676). Other Panama specimens of both sexes examined from Fort Clayton and Mojinga Swamp, Panama Canal Zone; Garachiné, Darién Province; Paris and Parita, Herrera Province; Río Hato and Aguadulce, Coclé Province; and Arraijan and Tocumen, Panamá Province. All of the specimens were collected by F. S. Blanton, in whose honor the species is named.

***Trypanalebra ziczac* (Osborn), new combination**

FIGURE 6,*m–p*

Protalebra ziczac Osborn, Journ. Dep. Agr. Porto Rico, vol. 13, p. 104, 1929.

Length of male 2.5 mm., of female 2.5–2.7 mm. Head strongly produced with anterior margin broadly rounded in dorsal aspect; median length of crown one-seventh greater than interocular width; disc flat or slightly convex; ocelli slightly closer to median line than to inner eye margins. Pronotum one-fifth longer than crown. Female seventh sternum with hind margin rectilinear, caudolateral angles rounded; pygofer setae more dispersed than in *T. blantoni* Young and occurring along almost entire length of ovipositor. Male plates each with single row of macrosetae from near base to apex. Male pygofer with process arising on ventral margin near base, elongate, slightly exceeding posterior pygofer margin in lateral aspect, gradually tapered and bisinuate apically, in ventral aspect the two processes parallel, gradually tapered through most their length, each with apical portion crescentiform with the concave surface medial. Ninth tergum and style as in *blantoni*. Aedeagus with dorsal apodeme weakly lobed on dorsal margin; unpaired ventral process about as wide as shaft; shaft with pair of short lateral anteapical expansions, the processes together forming an equilateral-triangle-shaped design in caudal aspect.

Crown with ground color sordid brownish gray, a cloverleaf-shaped area in anterior half of disc and the hind margin broadly edged with dull ivory. Pronotum and scutellum deep yellow to orange, the former bordered behind with a vitreous rim that is narrowly bordered anteriorly with black. Forewings translucent; each clavus olive yellow to orange, the basal half of inner margin extremely narrowly black, within a narrow hyaline to lacteus vitta parallel to inner claval margin from wing base to slightly behind midlength, extending thence caudolaterad through brachial cell then obtusely angled and extending caudomesad along vein Cu and continuous at its apex with lacteus angulate base of inner apical cell, this elongate zigzag vitta occasionally narrowly bordered with smoky in posterior half its length; olive-yellow or orange of clavus extending into brachial cell near its apex, and extending across claval suture at its midlength into corium in

an arched vitta extending beyond midwidth of corium, thence caudad and narrowing along vein M to yellow or orange base of second apical cell; an oblique vitta extending from behind midlength of costal margin to apex of cell R, and areole of third apical cell darkly, the areoles of first and second apical cells paler, fumose; base of outer apical cell with a black spot next costal margin; costal margin narrowly pale yellow in basal half. Face and venter pale except dark mesothorax.

The type, a female from Mayaguez, Puerto Rico, is probably in the Ohio State University collection. Caldwell (*in* Caldwell and Martorell, 1952, p. 99) selected a male allotype from Vieques Island, Puerto Rico, and it is upon this specimen that the above genitalia description is based.

In addition to Puerto Rico specimens, a pair of specimens collected at Tamazumchale, Mexico, Dec. 23, 1949, by Dr. R. H. Beamer appear to be conspecific with the Puerto Rican forms. The Mexican female is larger, measuring 3.0 mm. The Mexican specimens have dark orange markings against a slate gray background on the wings, and the transverse facial stripe is orange.

Blarea, new genus

FIGURE 7

Type of the genus, *Blarea brasiliensis*, new species.

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R evanescent apically; vein Cu_2 confluent with submarginal vein in basal half of wing, slightly basad of vein m-cu. Forewing with appendix not extending around apical wing margin which is smoothly rounded; inner apical cell not greatly wider at base than at apex; second apical cell slender, parallel-sided; third apical cell sessile, short, much broader at apex than at base; outer apical cell short, longer than broad, its base proximad of base of third apical cell. Male plates triangular in ventral aspect, exceeding posterior pygofer margin, each with single row of macrosetae over apical two-thirds. Pygofer with posterior margin truncate; macrosetae few, in a vertical row on disc; pygofer processes very weak, consisting of differentially sclerotized areas of pygofer wall, one on each side extending from dorsal margin ventrad to middle of disc and one on each side forming an irregular linear area along ventral pygofer margin. Ninth tergum with a trilobed transverse tergite consisting of a pair of slender lateral arms and a small lobate central area, all delimited by lines of flection from remainder of pygofer. Anal processes absent. Style slender, elongate, without preapical lobe, the apical portion curved mesoventrad. Connective membranous. Aedeagus with preatrium

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distinct, short; dorsal apodeme laterally compressed; unpaired ventral process gradually tapered from near base to acute apex, longer and broader than setiform shaft. Head very slightly produced, crown with median length less than half interocular width; ocelli on very broadly rounded margin between crown and face, closer to median line than to inner eye margins. Pronotum with median length more than three times median length of crown, wider than head including eyes, lateral margins strongly divergent posteriorly. Face slightly convex in lateral aspect.

Known only from the genotype, from Brazil.

In this genus, the form of the male genitalia indicates a close relationship to *Trypanalebra*. The shorter head, the evanescent posterior branch of vein R in the hind wing, and the lack of paired aedeagal processes in *Blarea* will serve to separate it from the preceding genus.

***Blarea brasiliensis*, new species**

FIGURE 7

Length of male 3.7 mm. Male plates in lateral aspect each with apical portion a rounded lobe lying in a sagittal plane. Style extending caudad to midlength of plate, bisinuate in lateral aspect. Aedeagus with dorsal apodeme strongly compressed laterally at base, the apex slightly expanded; shaft measured at midlength with width less than one-third adjacent width of ventral process, about three-fourths length of ventral process.

Crown dull yellow with an apical black spot. Pronotum shining deep brown, anterior submarginal area black, posterior and humeral margins broadly yellow. Wings smoky translucent, costal plaque

FIGURE 7.—*Blarea brasiliensis* (type): *a*, anterior dorsum; *b*, style, ventral aspect; *c*, pygofer, lateral aspect; *d*, aedeagus, lateral aspect.

darker, an elongate-oval transcommissural transverse vitta extending slightly laterad of brachial cell of each wing and crossing clavus slightly behind midlength, bright yellow. Face concolorous with crown; clypellus and adjacent apical portion of clypeus black; legs stramineous; remainder of venter black.

Described from a single male from Rezende, Estado de Rio, Brazil, March 1924 (F. X. Williams), in the collection of the Hawaiian Sugar Planters Association.

Relaba, new genus

FIGURE 8

Type of the genus, *Relaba williamsi*, new species.

Hind wing with submarginal vein confluent with apical wing margin to apex of vein M_{1+2}; posterior branch of R occurring as a short spur; vein Cu_2 confluent with submarginal vein at point much basad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell much broader in basal third than in remainder of length; second apical cell parallel-sided; third apical cell very small, triangular, petiolate; outer apical cell with length greatly exceeding width, not attaining apical wing margin. Male plates not exceeding pygofer, each with longitudinal submarginal row of few macrosetae on basal half. Pygofer with posterior

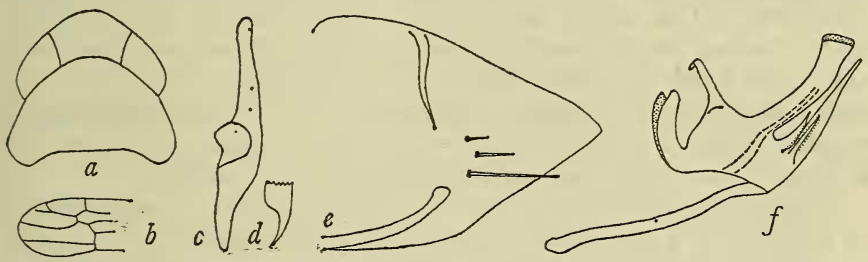

FIGURE 8.—*Relaba williamsi* (type): *a*, anterior dorsum; *b*, apex of forewing; *c*, style, dorsal aspect; *d*, style apex, lateral aspect; *e*, pygofer, lateral aspect; *f*, aedeagus, lateral aspect.

margin produced; disc with few macrosetae in a vertical row; with dorsal and ventral pygofer processes. Ninth tergite distinct, transverse, delimited laterally by a line of flection, anterior margin bilobed. Anal processes absent. Style short, with preapical lobe. Connective membranous. Aedeagus with preatrium elongate; dorsal apodeme paired; paired and unpaired ventral atrial processes present. Sternal abdominal apodemes not traversing first conjunctiva. Head weakly produced, crown with median length less than interocular width; ocelli on rounded margin between crown and face slightly closer to inner eye margins than to median line. Pronotum much longer than crown, wider than head including eyes; lateral margins strongly divergent posteriorly. Face slightly convex in lateral aspect.

Distribution: Ecuador.

The male genitalia suggest a relationship to *Trypanalebra* and *Blarea,* from both of which *Relaba* can be readily separated by its asymmetrical dorsal aedeagal process.

***Relaba williamsi*, new species**

FIGURE 8

Length of male 4.0 mm. Crown with median length slightly more than two-thirds interocular width and approximately half length of pronotum. Male plates broad basally, each with lateral margin convex and strongly narrowing to mesal margin in basal half, apical half slender and slightly tapered. Pygofer with posterior margin strongly produced and subangulate apically; with few discal macrosetae behind middle of disc; a short, ventral process occurring as thickened edge of inrolled ventral pygofer wall; and a slender acute sclerotized rod arising along dorsal margin, extending ventrad to point near middle of disc. Style very short, in dorsal aspect gradually tapered to slender rounded apex, in lateral aspect with preapical lobe, apical extension short, slightly decurved, acute apically. Aedeagus with preatrium longer than shaft, very slender; dorsal apodeme consisting of two arched lateral arms each extending dorsocaudad; with a median ventral acute unpaired atrial process almost as long as shaft, and a pair of minute acute processes arising near base, one on each side of unpaired process; shaft flared apically, around gonopore, expanded basally and giving off an unpaired slender process which is directed caudodorsad and asymmetrically curved apically.

Crown dull ivory with a pair of round black spots one on each side of median line near anterior margin; disc with a large dull red spot on each side of median line, near middle. Pronotum brick-red, the lateral and humeral margins bordered with ivory and with a longitudinal median ivory vitta, the ivory border occasionally extending completely across hind margin, and confluent with posterior prolongation of median vitta. Scutellum dull yellow, a pair of marginal spots opposite transverse sulcus, and apex, black. Forewing with ground color of clavus and adjacent corium translucent orange; a transcommissural vitta at midlength of clavus extending into corium of each wing, hyaline, bordered with dull smoky; apical portion of each wing hyaline basally and laterally, remainder smoky translucent with a faint transverse hyaline area through appendix and first and second apical cells; apical veins pale; third and fourth apical cells and apex of costal cell bordered with black internally; costa orange in basal half; costal cell with an oblique dark vitta at midlength. Face dull ivory to gray faintly washed with orange near clypeal suture, with a conspicuous interocular orange band below base. Venter and legs pale, except black mesosternum and apex of hind tibia.

Holotype male, Mar. 8, 1923, paratype males, Mar. 25, and Apr. 4, 1923, in collection of Hawaiian Sugar Planters Association and one male paratype, Apr. 4, 1923, in U. S. National Museum. All are from Tena, Ecuador, and were collected by F. X. Williams, in whose honor the species is named.

Genus *Aphanalebra* McAtee

FIGURE 9

Protalebra subgenus *Aphanalebra* McAtee, Journ. New York Ent. Soc. vol. 34, p. 152. 1926 (type *Protalebra unipuncta* Baker by original designation).
Aphanalebra; Young, Univ. Kansas Sci. Bull. 35, p. 20, 1952.

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein at point much basad of vein m-cu. Forewing with appendix not extending around wing apex which is smoothly rounded; veins M and Cu fused before base of inner apical cell; inner apical cell slender, much broader at base than at apex; second apical cell angular at base, petiolate, slender; third apical cell very small, triangular, long-petiolate; outer apical cell open basally,

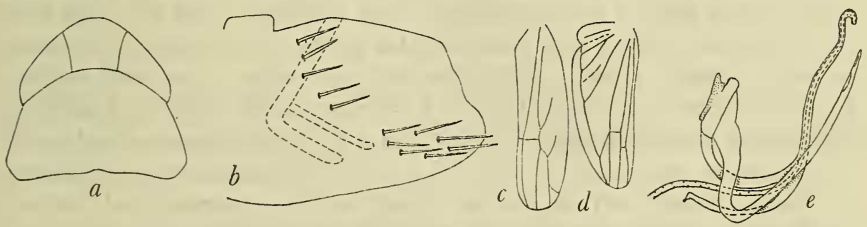

FIGURE 9.—*Aphanalebra unipuncta: a,* anterior dorsum (type); *b,* pygofer, lateral aspect (anal process in broken line) (type); *c,* forewing; *d,* hind wing; *e,* aedeagus, lateral aspect (type).

almost attaining apical wing margin. Female seventh sternum produced posteriorly, the hind margin convex on each side of a shallow V-shaped median excision; pygofer with macrosetae on posterior two-thirds. Male plates triangular, elongate, exceeding posterior pygofer margin, each with oblique row of macrosetae in apical half. Male pygofer with apex truncate; macrosetae arranged in an irregular oblique group over disc; processes absent. Ninth tergum a heavily sclerotized transverse area without lines of flection laterally or apically. Two pairs of anal processes present. Style elongate, without a preapical lobe, the apex slightly decurved. Connective membranous. Aedeagus with preatrium absent; dorsal apodeme Y-shaped with arms widely spaced, giving off a unilateral process that extends caudad almost to apex of shaft; shaft elongate, bisinuate, recurved apically; gonopore terminal. Head produced with anterior margin broadly

rounded; crown with median length equal to interocular width; ocelli on broad margin between crown and face, about equidistant from inner eye margins and median line of head. Pronotum twice length of crown, wider than head including eyes; lateral margins strongly divergent posteriorly. Face flat in profile.

Distribution: Brazil.

The characters in the key will easily separate *Aphanalebra* from other alebrine genera. The form of the aedeagus is unique in the tribe.

Aphanalebra unipuncta (Baker)

FIGURE 9

Protalebra unipuncta Baker, Psyche, vol. 8, p. 404, 1899.
Aphanalebra unipuncta; Young, Univ. Kansas Sci. Bull. 35, p. 20, 1952.

Length of male 3.1 mm., of female 3.2–3.3 mm. Male pygofer with posterior margin truncate, macrosetae arranged in an oblique group over disc. Style with apex appearing truncate in dorsal aspect. Other characters as in generic description.

Crown dull ivory with a single apical round black spot. Pronotum olive yellow with a pair of oblique oval markings, one on each side of median line, and a pair of horizontal dashes, one on each side near posterior margin, black. Scutellum orange-yellow, the basal angles, a median streak in basal half and extreme apex, black. Forewing with costal margin broadly hyaline and a transverse transcommissural hyaline area extending to midcorium of each wing across midlength of clavus; basal half of clavus orange with a longitudinal curved black streak that widens apically to border the hyaline area anteriorly; posterior third of clavus, adjacent corium and apical cells except outer, smoky; longitudinal veins pale orange. Face and venter sordid yellow.

This species was originally described from four specimens from Chapada, Brazil. A male of the original series, No. 29519 in the U. S. National Museum, bears a type label. This specimen is here designated lectotype. The other three specimens bear "paratype" labels with the same catalog number, presumably affixed by McAtee in 1926.

Osbornulus, new genus

FIGURE 10

Type of the genus, *Dikraneura quadrifasciata* Osborn.

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein at point considerably proximad of vein m-cu. Forewing with appendix not extending around apex which is smoothly

rounded; inner apical cell narrowest at base, gradually broadening throughout its length; second apical cell almost parallel-sided; third apical cell sessile; outer apical cell longer than broad, its base distinctly proximad of base of third apical cell. Male plates triangular, exceeding posterior pygofer margin, each with single longitudinal row of macrosetae over middle half. Pygofer with posterior margin slightly angularly produced posteriorly; macrosetae irregularly arranged over posterior half of disc; two processes on each side occurring as differentially sclerotized areas of the pygofer wall, one along posteroventral margin, slender basally, broadened at pygofer apex,

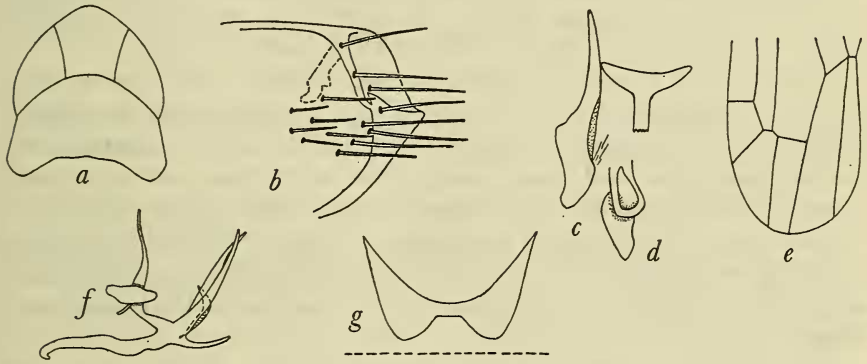

FIGURE 10.—*Osbornulus quadrifasciatus: a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, style, lateral aspect, and connective; *d*, style apex, ventral aspect; *e*, apex of forewing; *f*, aedeagus, lateral aspect (type); *g*, sternal abdominal apodemes, ventral aspect (broken line represents conjunctiva).

the other extending along posterior pygofer margin then caudoventrad across posterior half of disc to the first process. Ninth tergite distinct, transverse, bounded laterally by distinct integumental thickenings. Anal processes occurring as a distinct anal collar, extending ventrad to middle of pygofer disc. Style short, without distinct preapical lobe. Connective T-shaped, strongly joined to base of aedeagus. Aedeagus with preatrium elongate, giving rise to two pairs of ventral processes; dorsal apodeme transverse; shaft slender, without processes. Sternal abdominal apodemes not traversing first conjunctiva. Head strongly produced, crown with median length exceeding interocular width; ocelli on rounded margin between crown and face, about equidistant from inner eye margins and median line of head. Pronotum longer than crown, wider than head including eyes; lateral margins slightly divergent posteriorly. Face slightly convex in lateral aspect.

This genus is named in honor of the late Prof. Herbert Osborn of the Ohio State University, who made many contributions to our knowledge of Cicadellidae.

Distribution: Bolivia and Brazil.

Osbornulus does not appear to be closely related to any of the other genera in the tribe. The form of the aedeagus with its two pairs of atrial processes serves to separate *Osbornulus* from all of the following genera.

***Osbornulus quadrifasciatus* (Osborn), new combination**

FIGURE 10

Dikraneura quadrifasciatas Osborn, Ann. Carnegie Mus. vol. 18, p. 272, 1928.
Elabra quadrifasciata; Young, Univ. Kansas Sci. Bull. 35, p. 35, 1952.

Length of male 3.8 mm. Crown with disc concave, median length almost twice interocular width and more than two-thirds median length of pronotum. Other characters as in generic description.

Ground color of dorsum lacteus, a pair of vittae beginning on disc of crown, extending caudad, diverging over pronotum and scutellum, extending entire length of each forewing parallel to commissure, around wing apex and basad along costa to its base, amber to pale brown, interrupted by white claval suture and a pair of oblique white vittae at and behind midlength of costa; posterior two-thirds of claval commissure white. Face and venter pale, an amber dash across pleural portion of pronotum on each side, apical hind tarsomere black.

The holotype, a male from Provincia del Sara, Bolivia, is in the Carnegie Museum collection. Additional specimens have been examined from Rio Caraguata, Mato Grosso, Brazil.

Genus *Protalebra* Baker

FIGURE 11

Protalebra Baker, Psyche, vol. 8, p. 402, 1899 (type *Alebra curvilinea* Gillette, by original designation).

Hind wing with submarginal vein confluent or not with apical wing margin; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein at point much basad of vein m-cu. Forewing with appendix not extending around wing apex which is smoothly rounded; inner apical cell wider in basal third than at apex; second apical cell parallel-sided; third apical cell stalked; outer apical cell elongate, trapezoidal, not attaining apical wing margin, its base distinctly proximad of base of third apical cell. Male plates triangular, attaining or exceeding posterior pygofer margin, abruptly narrowed at midlength, each with a single row of macrosetae extending from near base to apex. Pygofer with posterior margin produced; macrosetae numerous, irregularly arranged on disc; pygofer processes arising ventrally or absent. Ninth tergum with or without a tergite. Anal processes present, straight, slender, variable in length inter-

specifically. Style elongate, slender, without a distinct preapical lobe; apex slightly decurved. Connective Y-shaped. Aedeagus with preatrium absent; dorsal apodeme vestigial or present and transverse or paired; with a conspicuous asymmetrical dorsal process; shaft slender, elongate, without processes. Head strongly produced; crown with median length exceeding interocular width; ocelli on rounded margin between crown and face, about equidistant from inner eye margins and median line of head. Pronotum with median length exceeding length of crown, wider than head including eyes; lateral margins strongly divergent posteriorly. Face convex in lateral aspect.

Distribution: Brazil, Argentina, and Virgin Islands.

Key to species of *Protalebra*

1. Male pygofer with dorsal processes only, discal and ventral processes absent; aedeagus with paired dorsal apodemes, each arm bilobed apically. **nexa** McAtee

   Male pygofer with discal and ventral pygofer processes in addition to dorsal; aedeagus with dorsal apodeme a transverse bar or absent. 2

2. Aedeagus with dorsal process slender and cylindrical, not broader than shaft; dorsal aedeagal apodeme vestigial. . . . . **haywardi,** new species

   Aedeagus with dorsal process broad, not cylindrical, conspicuously broader than shaft; dorsal aedeagal apodeme a transverse bar . **curvilinea** (Gillette)

Protalebra curvilinea (Gillette)

FIGURE 11,*a–f*

Alebra curvilinea Gillette, Proc. U. S. Nat. Mus., vol. 20, p. 710, 1898.
Protalebra curvilinea; Baker, Psyche, vol. 8, p. 405, 1899.

Length of female 3.2 mm. Crown with median length less than one-third greater than interocular width and two-thirds median length of pronotum. Hind wing with submarginal vein not confluent with apical wing margin. Female seventh sternum large, hind margin strongly produced in a broad lobe which is obliquely convex on each side of the straight apex; pygofer heavily setose with pale setae on each side of the ovipositor throughout its length, a few of the setae contrasting black. Male plates exceeding posterior pygofer margin. Male pygofer with posterior margin lobed ventrally, with an almost straight ventral process extending from near base caudodorsad to apical margin of pygofer, the two processes convergent in their apical halves in ventral aspect but not approximate apically; dorsal margin with a differentially sclerotized integumental bar extending to midlength of margin, thence curved abruptly ventrad to slightly above middle of disc; disc with a second such bar extending horizontally from near middle to apex; tergum with a basal transverse heavily sclerotized bar with a median triangular posterior projection. Anal processes strong, slender, extending ventrad beyond middle of

disc of pygofer. Connective membranous near its articulation with styles, with a Y-shaped heavily sclerotized median portion which is bilobed apically. Aedeagus with dorsal apodeme a transverse bar; with a large asymmetrical dorsal process about as long as shaft.

Ground color of crown, pronotum and scutellum ivory, a transverse undulate vitta between eyes, a transverse vitta completely across pronotum before middle, and basal angles of scutellum, dull yellow. Forewings hyaline with an omega-shaped lacteus marking on a pale yellow background intersecting commissural margin just behind scutellum, bordering inner margin of costal plaque laterally, extending thence to claval apex, thence caudolaterad to outer apical cell, the anterior transverse portion bordered narrowly with black before and behind. Face and venter entirely pale.

Known only from the male type and a female paratype from Chapada, Brazil, in the U. S. National Museum.

***Protalebra haywardi*, new species**

FIGURE 11,*g–j*

Length of male 2.8 mm. Crown with median length almost one-half greater than interocular width and two-thirds median length of pronotum. Hind wing with submarginal vein confluent with apical wing margin. Male plates as in *P. curvilinea* (Gillette) but not exceeding posterior pygofer margin; pygofer with ventral portion of posterior margin produced posteriorly in an acute lobe; a process arising ventrally, distad of anterior half of ventral margin, weak, extending caudodorsad, not attaining posterior margin; dorsal and discal integumental bars present as in *curvilinea* but with latter more oblique and beginning almost at anterior pygofer margin; tergum with transverse bar as in *curvilinea* but without the triangular projection. Anal processes forming an anal collar, not extending ventrad to discal region of pygofer in lateral aspect. Connective short, Y-shaped, with bilobed apical portion, completely sclerotized. Aedeagus with dorsal apodeme vestigial; with a conspicuous elongate slender process, no wider than shaft in lateral aspect, arising dorsad of shaft, extending caudad thence dorsocephalad, apex sharply rounded in lateral aspect, bifid in ventral aspect; shaft slender, elongate, extending parallel to dorsal process almost to apex.

Ground color of crown, pronotum, and scutellum ivory, a faint transverse line across disc of crown between eyes dull orange; a transverse vitta across basal portion of disc of pronotum with an acute median posteriorly directed tooth, a trilobed transverse marking across base of scutellum and the median line of the scutellum to apical third, orange yellow. Forewings with ground color translucent yellow, a lacteus circle crossing commissure just behind scutellar apex

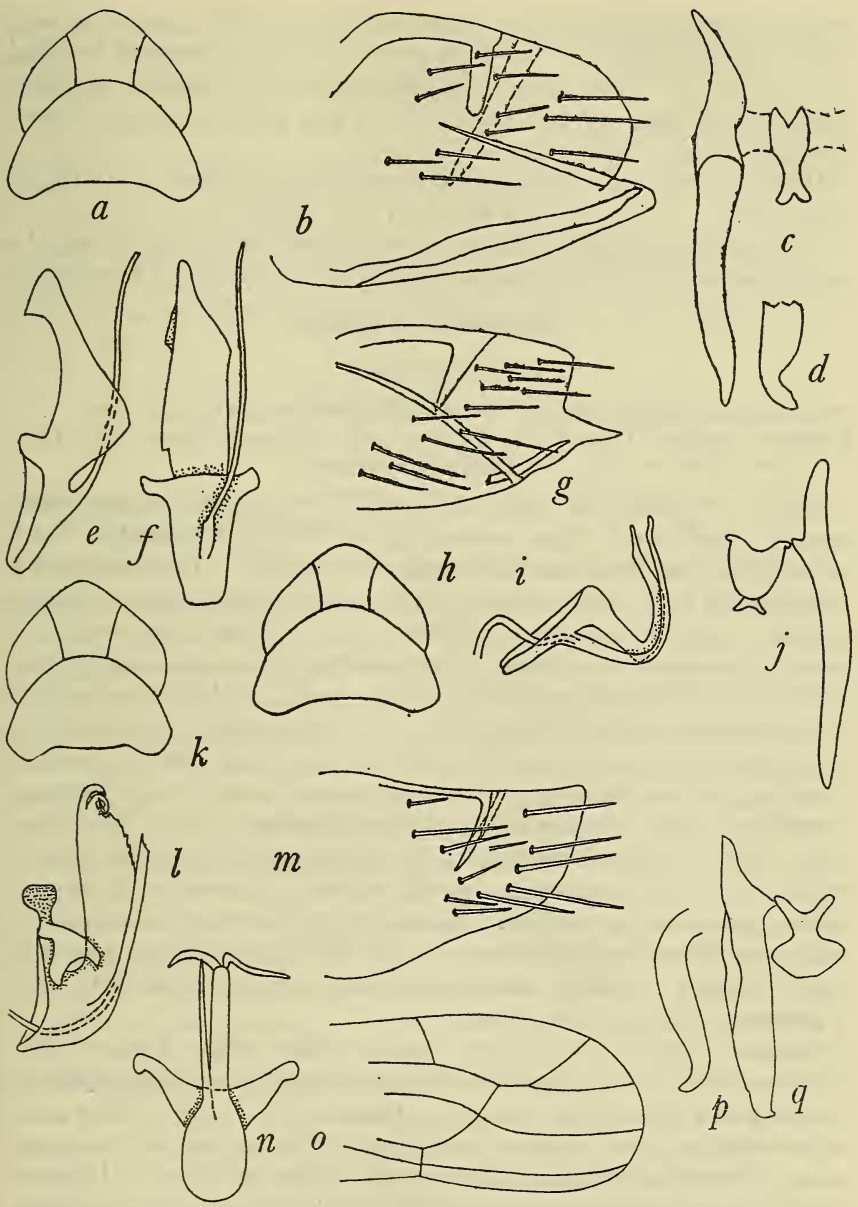

FIGURE 11.—*Protalebra*. *a–f*, *P. curvilinea* (type): *a*, anterior dorsum; *b*, pygofer, lateral aspect (broken line is anal process); *c*, style and connective, dorsal aspect; *d*, style apex, lateral aspect; *e*, aedeagus, lateral aspect; *f*, the same, caudal aspect. *g–j*, *P. haywardi* (type): *g*, pygofer, lateral aspect; *h*, anterior dorsum; *i*, aedeagus, lateral aspect; *j*, style and connective, dorsal aspect. *k–q*, *P. nexa*: *k*, anterior dorsum; *l*, aedeagus, lateral aspect; *m*, pygofer, lateral aspect; *n*, aedeagus, caudal aspect; *o*, apex of forewing (type); *p*, style apex, lateral aspect; *q*, style and connective, ventral aspect.

and at claval apex, bordering inner margin of costal plaque on each wing, and with an arched extension on each wing from apex of brachial cell to apex of cell R; apical cells subhyaline with a small black spot in areoles of first, second, and third. Face, pleural portion of pronotum and venter pale.

Holotype male, Tucumán, Argentina, January–March 1941 (K. J. Hayward), in U. S. National Museum (No. 62887).

This species is closely related to *curvilinea* from which it may be distinguished by the characters in the key and in the above description.

Protalebra nexa McAtee

FIGURE 11,*k–q*

Protalebra nexa McAtee, Journ. New York Ent. Soc. vol. 34, p. 150, 1926.
Protalebra insularis Caldwell, *in* Caldwell and Martorell, Journ. Agr. Univ. Puerto Rico, vol. 34, p. 94, 1952, new synonymy.

Length of male 2.6 mm., of female 2.7–2.8 mm. Crown with median length more than one-half greater than interocular width and slightly less than median length of pronotum. Hind wing with submarginal vein not confluent with apical wing margin. Female genitalia as in *P. curvilinea* (Gillette) but with posterior margin of seventh sternum less convex and without dark macrosetae on pygofer. Male plates exceeding posterior pygofer margin. Male pygofer with posterodorsal portion produced posteriorly, subangulate; pygofer with dorsal integumental bar as in *curvilinea*, the apical vertical portion extending to middle of pygofer disc; ventral and discal processes wanting; tergum without differentially sclerotized area. Anal processes confluent with lower portion of vertical part of pygofer process. Style weakly biundulate in lateral aspect. Connective Y-shaped with apical portion expanded. Aedeagus with dorsal apodeme paired, each arm diverging from long axis of shaft and bilobed apically; dorsal process laterally compressed, longer than shaft, with pair of asymmetrical appendages at apex.

Ground color of crown ivory with a faint yellow tint on disc. Pronotum deep yellow, the lateral margins, humeral margins, posterior margin and two anterior extensions from it, ivory. Scutellum deep yellow with an ivory spot on each side of disc at end of transverse sulcus. Forewing lacteus, clavus with a spot at base, a]-shaped marking at midlength and an anteapical dash, corium with an oblique dash near base, a similar one bordering anterior half of costal plaque and expanding at claval suture, and a line before apical cells on veins M and Cu, yellow, the marking near claval apex sometimes orange; an oblique line behind costal plaque, apex of vein R, and base of outer apical cell black, an oblique irregular marking from apex of clavus to costal margin at third apical cell, involving basal portions

of apical cells, ivory bordered with black; apical margin broadly smoky. Face, venter and pleural portion of pronotum pale, the posttibiae with apices, and a few of spines, black.

The female holotype and two female paratypes from St. Thomas, Virgin Islands, and the male holotype of *Protalebra insularis* Caldwell from the same island are in the U. S. National Museum. No other specimens have been seen.

This species differs from the two preceding species in its lack of discal and ventral processes on the pygofer, its possession of paired and lobed aedeagal apodemes, and its lack of an omega-shaped pattern on the dorsum.

Genus *Balera* Young

FIGURES 12, 13

Balera Young, Univ. Kansas Sci. Bull. 35, p. 25, 1952 (type *Dikraneura pellucida* Osborn by original designation).

Hind wing with submarginal vein distinct and free from apical wing margin; posterior branch of vein R entire; vein Cu_2 confluent with submarginal vein near midlength of wing, much basad of vein m-cu. Forewing with appendix not extending around wing apex which is smoothly rounded; all apical cells much longer than broad, parallel-sided, angulate basally, their bases (except first) almost in same transverse line; outer apical cell almost attaining apical wing margin. Male plates exceeding posterior pygofer margin, slightly beaked apically in lateral aspect, each with single or double row of weak macrosetae. Pygofer produced posteriorly, occasionally forming an apical process which is not differentially sclerotized, without discal macrosetae, with group of small macrosetae near and parallel to posterodorsal margin. Ninth tergum without a tergite or differentially sclerotized area. Anal processes weak or absent. Style sigmoid in lateral aspect. Connective V- or Y-shaped. Aedeagus with preatrium present or absent; dorsal apodeme absent or present and variable interspecifically; shaft with one or two pairs of apical or anteapical processes. Sternal abdominal apodemes slender and elongate, usually capitate apically, traversing one or two abdominal conjunctivae. Head slightly produced with apex rounded or obtusely angulate; ocelli on broadly rounded margin between crown and face, about midway between median line of head and inner eye margins. Pronotum more than one-half longer than head, broader or narrower than head including eyes; lateral margins subparallel or divergent posteriorly. Face flat to slightly convex, widely divergent from crown in profile.

Distribution: Panama, Trinidad, Brazil, and Bolivia.

The peculiar styles of the males, the capitate elongate sternal abdominal apodemes, and the chaetotaxy of the pygofer set *Balera* well apart from all other alebrine genera.

Key to species of *Balera*

1. Aedeagus with shaft greatly inflated throughout its length, with three apical lobes . . . . . **pellucida** (Osborn)
   Aedeagus not so 2
2. Aedeagus with a pair of preapical lateral keels and an apical spiniform process. **pusilla,** new species
   Aedeagus not so 3
3. Aedeagus with two pairs of apical processes, both pairs standing out from shaft . . . . . **emarginata** (Osborn)
   Aedeagus with a single pair of elongate retrorse subapical processes appressed to shaft . . . . . **caraguatae,** new species

Balera pellucida (Osborn)

FIGURE 12,*a–e*

Dikraneura pellucida Osborn, Ann. Carnegie Mus., vol. 18, p. 271, 1928.
Balera pellucida; Young, Univ. Kansas Sci. Bull. 35, p. 26, 1952.

Length of male 2.7 mm. Crown short, triangular, the apex broadly rounded; median length seven-eighths interocular width and almost two-thirds median length of pronotum which is not as broad as head including eyes. Male plates each with double row of macrosetae on basal half. Pygofer with posterior margin produced to narrow process which is directed mesad and not differentially sclerotized. Style sigmoid in apical half, with preapical setae on ventral surface. Connective V-shaped. Aedeagus inflated, preatrium very short; dorsal apodeme weak; shaft keeled laterally with keels widened apically to form pair of membranous lobes which extend dorsolaterally and are continuous through a similar ventral subapical lobe which extends ventrad. Sternal abdominal apodemes scarcely traversing first conjunctiva.

The type has faded. Original description: "Pale yellowish; vertex and front and anterior part of pronotum tinged with fulvous; elytra subhyaline; clavus tinged with yellow and with dusky apex; apical cells slightly smoky; beneath pale yellow."

The holotype, a male from Bolivia, is in the Carnegie Museum.

The form of the aedeagus will readily separate this from other species of the genus.

Balera caraguatae, new species

FIGURE 12,*f–l*

Length of male 3.3–3.6 mm. Crown short, triangular, the apex broadly rounded; median length more than two-thirds interocular width and more than two-thirds length of pronotum which is slightly

wider than head including eyes; lateral pronotal margins slightly divergent posteriorly. Male plates each with single or double row of weak macrosetae on basal half. Pygofer in lateral aspect with posterodorsal portion produced, the posteroventral margin oblique and broadly convex. Style narrow, short, not greatly exceeding apex

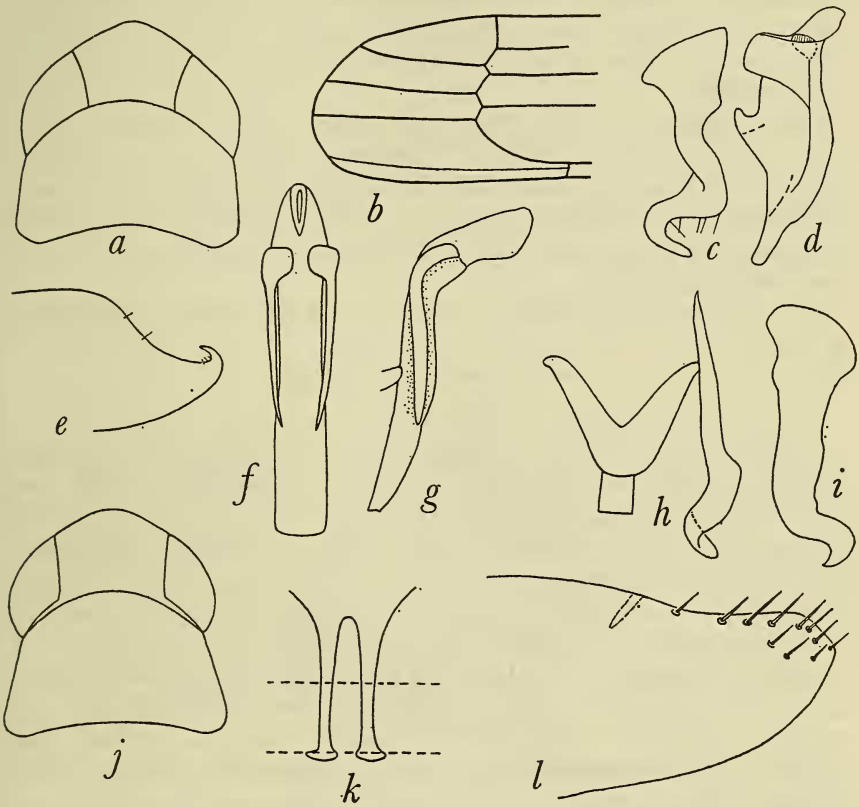

FIGURE 12.—*Balera*. *a–e*, *B. pellucida* (type): *a*, anterior dorsum; *b*, apex of forewing; *c*, style, lateral aspect; *d*, aedeagus, lateral aspect; *e*, pygofer, lateral aspect. *f–l*, *B. caraguatae* (type): *f*, aedeagus, dorsal aspect; *g*, same, lateral aspect; *h*, style and connective, dorsal aspect; *i*, style, lateral aspect; *j*, anterior dorsum; *k*, sternal abdominal apodemes, ventral aspect (broken lines represent abdominal conjunctivae); *l*, pygofer, lateral aspect.

of connective; apical half sigmoid in lateral aspect with the apex acute and curved ventrad. Connective Y-shaped, the unpaired portion very short. Aedeagus slightly compressed dorsoventrally with preatrium distinct; dorsal apodeme absent, shaft heavily sclerotized from base to anteapical origin of paired shaft processes, the more distal portion of shaft lightly sclerotized; processes slender extending basad, appressed to shaft, acute at tips. Sternal abdominal apodemes traversing two conjunctivae.

Ground color of crown and pronotum dull sordid yellow to dull gray, occasionally with a pair of dull orange markings on pronotal disc. Scutellum gray, the midline paler in basal half. Forewings milky subhyaline, a vitta in clavus parallel to claval suture and one in corium in brachial cell, dull yellow; apex of clavus, a spot in apex of brachial cell, apex of cell R, one in apex of cell M and one in each base of second and third apical cells, smoky. Face sordid yellow with a pair of darker vittae on clypeus; remainder of venter without dark markings.

Male holotype and 43 male paratypes, Rio Caraguata, Mato Grosso, Brazil, March 1953 (F. Plaumann), allotype, and 35 female paratypes in Snow Entomological Collections, University of Kansas; 8 paratypes in U. S. National Museum. One additional specimen from Los Cruces, Panama, and one from Trinidad Naval Base, B. W. I., have been examined.

The long recurved aedeagal processes are not found in other species of *Balera*.

***Balera pusilla*, new species**

FIGURE 13,*a–d*

Length of male 3.3 mm. Crown short, triangular with apex subangulate; median length about two-thirds interocular width and about half median length of pronotum which is about as wide as head including eyes, with lateral margins slightly divergent posteriorly. Male plates with macrosetae in double row near base of plate, uniseriate in apical two-thirds, decreasing in size apically, the row extending to the plate apex. Pygofer produced slightly dorsad apically in a broadly rounded lobe. Anal process short. Style not greatly exceeding apex of connective, with preapical lobe distinct, apical extension strongly decurved. Connective triangular with a median keel apically. Aedeagus slender and elongate, preatrium distinct, dorsal apodeme distinct, shaft with a median ventral and paired lateral anteapical keels, the ventral keel produced posteriorly beneath gonopore in a spiniform apical process. Sternal abdominal apodemes as in *B. caraguatae*.

Crown and pronotum greenish yellow, a darker yellow spot on each side of pronotum in posterior part of disc. Scutellum sordid yellow, the transverse sulcus bordered with ivory. Forewing hyaline with a faint green stripe in clavus and a similar stripe in brachial cell of corium; costal margin bordered with green in its basal third; a faint smoky spot in claval apex, in apices of cells M and Cu and in bases of each of inner three apical cells; wing apex tinted with smoky. Face and venter sordid unmarked greenish yellow.

Holotype male from Las Palmas, Veraguas Province, Panama, Sept. 16, 1953; three paratypes from Aguadulce, Coclé Province,

Panama, Sept. 25, 1951; and one paratype each from Chiriquí, Chiriquí Province, Panama; Paris, Herrera Province, Panama; Río Hato, Coclé Province, Panama; and Fort Kobbe, Panama Canal Zone, all collected by F. S. Blanton and in U. S. National Museum (No. 62675).

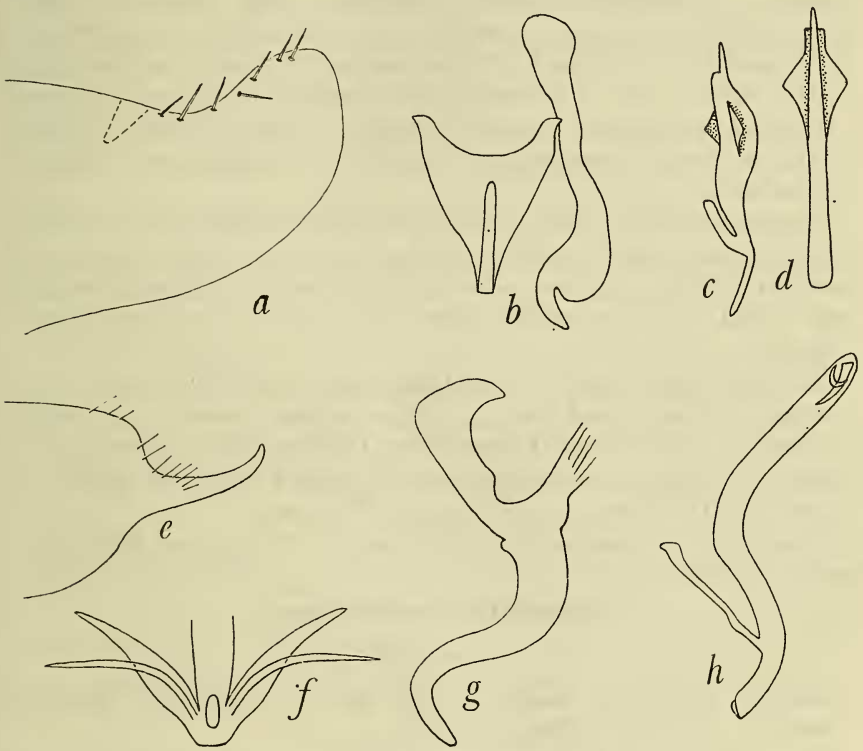

FIGURE 13.—*Balera. a–d, B. pusilla* (type): *a*, pygofer, lateral aspect; *b*, style, and connective, dorsal aspect; *c*, aedeagus, lateral aspect; *d*, aedeagus, caudal aspect. *e–h, B. emarginata: e*, pygofer, lateral aspect; *f*, apex of aedeagus, dorsal aspect; *g*, style, lateral aspect; *h*, aedeagus, lateral aspect.

The male genitalia will readily distinguish this from other species of *Balera*.

***Balera emarginata* (Osborn)**

FIGURE 13,*e–h*

Empoasca emarginata Osborn, Ann. Carnegie Mus., vol. 18, p. 286, 1928.

Length of male 3.6 mm. Crown short, very slightly produced, median length slightly less than interocular width and more than half of pronotum which is narrower than head including eyes. Male plates each with single row of macrosetae extending from basal fourth

almost to apex. Pygofer with midposterior margin produced posteriorly in gradually tapering process which is curved sharply dorsad at apex, the tip sharply rounded; in ventral aspect the two processes slightly convergent. Style short and slender, strongly sigmoid, the apex directed ventrad, with few small preapical setae along ventral surface. Connective Y-shaped. Aedeagus with preatrium short; dorsal apodeme elongate, slender; shaft extending caudodorsad in basal portion, curved and directed caudad in greater portion of its length, with a pair of flattened lateral processes and pair of dorsal cylindrical processes at apex; gonopore oval, preapical, dorsal. Sternal abdominal apodemes not capitate, traversing one abdominal conjunctiva.

Ground color of crown, pronotum and scutellum straw yellow. Forewing pale milky translucent, base of costa, entire clavus, and brachial cell faintly yellow, with a faint fumose spot in apex of brachial cell; apical veins contrasting paler. Face and venter entirely pale yellow.

The type and a short series of paratypes from Bolivia are in the Carnegie Museum and are the only specimens known. As stated by Osborn in the original description, the type series appears to be faded. The above color description is from a topotypic male, not determined by Osborn, in the Carnegie Museum.

The male genitalia will readily separate this species from other species of *Balera*.

Genus *Brunerella* Young

FIGURE 14

Brunerella Young, Univ. Kansas Sci. Bull. 35, p. 31, 1952 (type *Brunerella magnifica* Young by original designation).

Hind wing with submarginal vein distinct apically, close to apical wing margin, extending slightly basad of apex of vein M_{1+2} as a short spur; posterior branch of R occurring as a long spur; vein Cu_2 confluent with submarginal vein at point proximad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell slender, parallel-sided; second apical cell slender, length half or more length of inner apical cell, parallel-sided; third apical cell sessile, slightly broader at apex than at base; outer apical cell much longer than broad, its base distinctly proximad of base of third apical cell. Female seventh sternum more than twice length of sixth, posterior margin broadly produced medially; pygofer with numerous irregular pale macrosetae on posterior two-thirds its length. Male plates short, gradually tapered, scarcely exceeding posterior pygofer margin, each with a longitudinal row of pale discal macrosetae extending from near base almost to apex. Male pygofer

not strongly produced, with a vertical group of few macrosetae on disc, without processes but with differentially sclerotized rods in pygofer wall. Anal processes present, short. Style short, slightly expanded anteapically; basal portion occasionally with plate-like lobe extending beneath articulating portion of connective. Connective slender, shallowly V-shaped. Aedeagus with preatrium short, broad; atrium with a pair of lateral apodemes arising from its dorsal portion; shaft slender, without processes or ornamentation. Sternal abdominal apodemes vestigial.

Head short, crown transverse with anterior margin very broadly rounded, with median length more than one-third greater than interocular width; ocelli on broadly rounded margin between crown and face, closer to inner eye margins than to median line of head. Pronotum short, broad, its width equal to width of head including eyes, lateral margins divergent posteriorly. Face broadly convex.

Distribution: Cuba and Mexico.

In both of the species treated below, the ventral face of the style is produced, plate-like, in a lobe that extends mesad beneath the articulation of the style. In males of *magnifica* the lobe is clearly defined and has the appearance of a branch of the style. In the allotype of *scriptozona* the lobe is less extensive and much less clearly defined at its apex.

In a recent paper, Linnavuori (1954, p. 132) placed *Typhlocyba flavonigra* Stål in this genus, and illustrated the type, a female from Brazil. In general form and venation of the forewing the resemblance to the species treated below is close. The venation of the apex of the hind wing differs. No males of the Stål species are known.

Key to species of *Brunerella*

Forewing with a broad deep red angular marking in base of clavus, second apical cell usually about two-thirds length of first; male pygofer with posterodorsal margin slightly emarginate . . . . . **magnifica** Young

Forewing with a narrow pink marking in base of clavus, second apical cell about half length of first; male pygofer not emarginate posterodorsally. **scriptozona** (Van Duzee)

Brunerella magnifica Young

FIGURE 14,*a–f*

Brunerella magnifica Young, Univ. Kansas Sci. Bull. 35, p. 32, 1952.

Length of male 3.3–3.5 mm. Crown with median length about one-half greater than interocular width and two-thirds median length of pronotum. Forewing with length of second apical cell variable, usually more than half length of inner apical cell. Male pygofer with posterior margin slightly concave. Style with distinct ventral

lobe extending mesocaudad beneath articulation with connective. Aedeagus in ventral aspect with shaft narrowest at midlength, in lateral aspect with apical fifth curved abruptly caudodorsad.

Head with crown ivory white with an irregular orange V-shaped mark in center, the arms broadly touching eyes. Pronotum sanguineous, posterior margin slate-gray, with a dark border between red and gray portions laterally. Scutellum greenish yellow, a slender dark transverse line just before apex. Forewing pruinose with a pale brick-red streak along costa near base, an angulate broad sanguineous vitta, its apex directed mesad, in basal half of clavus, and a contiguous red spot in adjacent corium, the posterior margin of both narrowly edged in black; apical half of clavus except extreme tip and inner half of adjacent corium amber, the corial portion continuing caudad, becoming fumose, and broadening to cover apical cells except few slate-gray fenestrae and brick-red apical veins; base of outer apical cell fumose next costal margin. Face and legs ivory, hind tibia narrowly embrowned apically. Female pygofer black with pale setae.

In specimens from Cuba, the red color of the anterior portion of the pronotum invades the more posterior gray portion in a large median tooth that extends nearly to the hind margin of the pronotum, and the darker coloration between red and gray areas is deeper than in the typical variety described above. The angular red markings of the anterior part of the forewing are deeper red and more extensive, forming a deep red line across the basal fourth of wing except hyaline areas, one adjoining scutellum, and one astride claval suture. The amber yellow of the central part of the wings extends completely across both wings nearly as far distad as the apex of the clavus. The wing apices are more deeply dark and the dark markings extend cephalad to include the claval apex.

The holotype, a male from Mexico near Jalapa, is in the Snow Entomological Collections. A series of Cuban specimens from Almandares River, near Havana, is in the U. S. National Museum.

***Brunerella scriptozona* (Van Duzee), new combination**

FIGURE 14,*g–k*

Protalebra scriptozona Van Duzee, Proc. California Acad. Sci., ser. 4, vol. 12, p. 186, 1923.

Length of both sexes (to apex of hind wing) 3.0 mm. Crown with median length more than one-half greater than interocular width and about four-fifths median length of pronotum. Forewing with second apical cell slightly more than half length of inner apical cell. Male genitalia as in *B. magnifica* Young, but pygofer not distinctly concave along posterodorsal margin, aedeagal shaft not broadened anteapically in ventral aspect, more gradually curved dorsocaudad in

apical half in lateral aspect, and style with basal plate-like lobe much less pronounced.

Crown dull ivory, in some specimens with a pair of faint yellow oblique vittae on disc. Pronotum pale gray, two angular spots on anterior margin and two similar spots near humeral margins, pink. Forewing with ground color lacteus, basal fourth with an angular vitta in base of clavus connected posteriorly with an undulate line extending

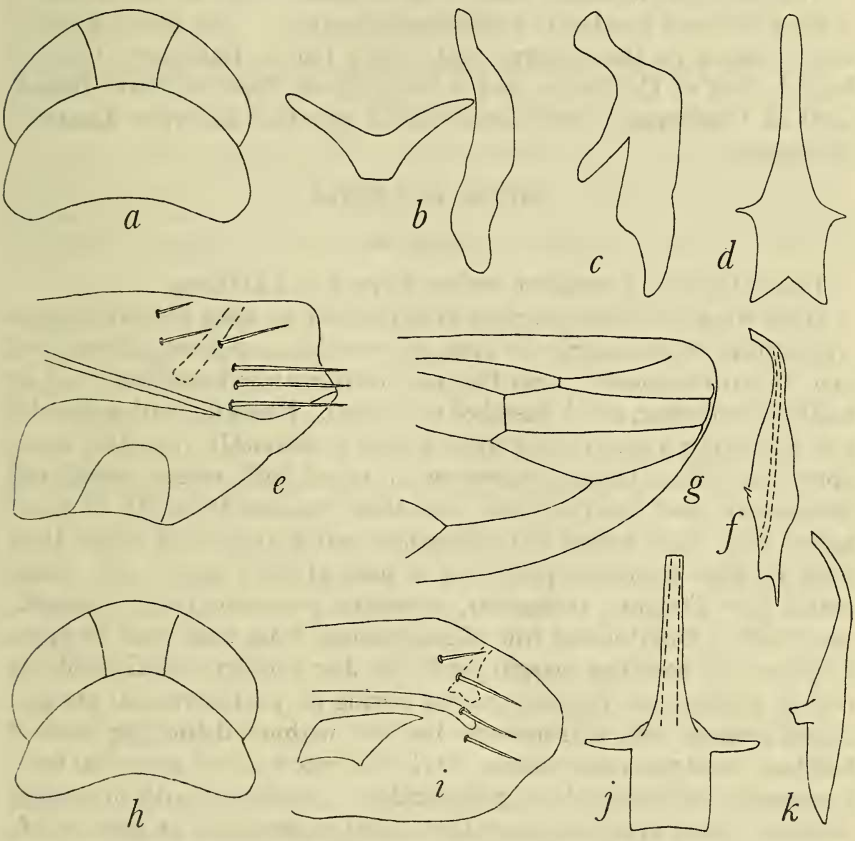

FIGURE 14.—*Brunerella*. *a–f*, *B. magnifica*: *a*, anterior dorsum; *b*, style and connective, dorsal aspect; *c*, style, ventrolateral aspect; *d*, aedeagus, ventral aspect; *e*, pygofer, lateral aspect (broken line is anal process); *f*, aedeagus, lateral aspect. *g–k*, *B. scriptozona* (allotype): *g*, apex of hind wing (in situ); *h*, anterior dorsum; *i*, pygofer, lateral aspect (broken line is anal process); *j*, aedeagus, ventral aspect; *k*, aedeagus, lateral aspect.

from commissural margin into corium, pale red; middle three-fifths of clavus and most of adjoining corium pale yellow, a spot in claval apex, one in apex of brachial cell, a longitudinal mark in base of appendix, a narrow diagonal line across midlength of inner apical cell, a narrow transverse arcuate line across basal halves of second and third apical

cells and a broad transverse band across wing apex from appendix to inner half of third apical cell, smoky; veins bordering apices of cells R and M and bases of second and third apical cells, crimson. Mesosterna black in both sexes. Female with face and remainder of venter pale gray except pygofer which has darker markings dorsally and laterally; abdomen black dorsally. Male face and venter as in female, but venter of abdomen black.

The holotype, a female from Ceralbo Island, Gulf of California, is in the California Academy of Sciences collections. The above description is based on the allotype male, from Puerto Ballandra, Carmen Island, Gulf of California, and a female from Espíritu Santo Island, Gulf of California. Both were loaned by the California Academy of Sciences.

Lareba, new genus

FIGURE 15

Type of genus, *Protalebra variata* Ruppel and DeLong.

Hind wing with submarginal vein distinct at apex but contiguous with apical wing margin to apex of vein M_{1+2}; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein at midlength of wing, much basad of vein m-cu. Forewing with appendix not extending around wing apex which is smoothly rounded; inner apical cell broad basally, narrower in apical half; second apical cell broader at apex than at base, less than two-thirds length of inner apical cell; third apical cell triangular; outer apical cell wider than long, its base distinctly proximad of base of third apical cell. Male plates very elongate, triangular, exceeding posterior pygofer margin, each with a longitudinal row of macrosetae from near base to apex. Pygofer with posterior margin produced, disc with an irregular oblique row of macrosetae; pygofer process arising on posteroventral margin. Ninth tergum with a transverse bar but without delimiting lines of flection. Anal processes absent. Style elongate without preapical lobe. Connective relatively short, papilioniform. Aedeagus with preatrium distinct, dorsal apodeme strap-like, slightly expanded at apex; shaft laterally compressed, appearing bifurcate in lateral aspect, the dorsal ramus bearing the gonoduct. Head short and broad, the anterior and posterior margins of crown parallel; ocelli on very broadly rounded margin between crown and face, about midway between inner eye margins and median line of head. Pronotum slightly wider than head including eyes; lateral margins slightly divergent posteriorly. Face in profile with contour strongly divergent from line of crown.

Known only from the genotype, from Mexico.

The relationship of *Lareba* to other alebrine genera is not clear. Among the broad-headed forms with a sclerotized connective, it is

distinct from *Balera* and *Brunerella* in its elongate styles, possession of pygofer processes and the venation of the forewings; and from *Balera* additionally in its possession of discal macrosetae on the pygofer. The bifurcate aedeagus in *Lareba* also differs from the genera mentioned above, and is very similar to that found in *Diceratalebra* but this feature is believed to be polyphyletic.

***Lareba variata* (Ruppel and DeLong), new combination**

FIGURE 15

Protalebra variata Ruppel and DeLong, Ohio Journ. Sci., vol. 53, p. 226, 1953.

Length of male 3.5 mm. Crown with anterior margin broadly rounded, with median length approximately two-thirds interocular width and less than half length of pronotum. Pygofer process sickle-shaped, the two processes widely separated apically in ventral aspect. Styles half length of male plates, gradually tapered, slightly decurved

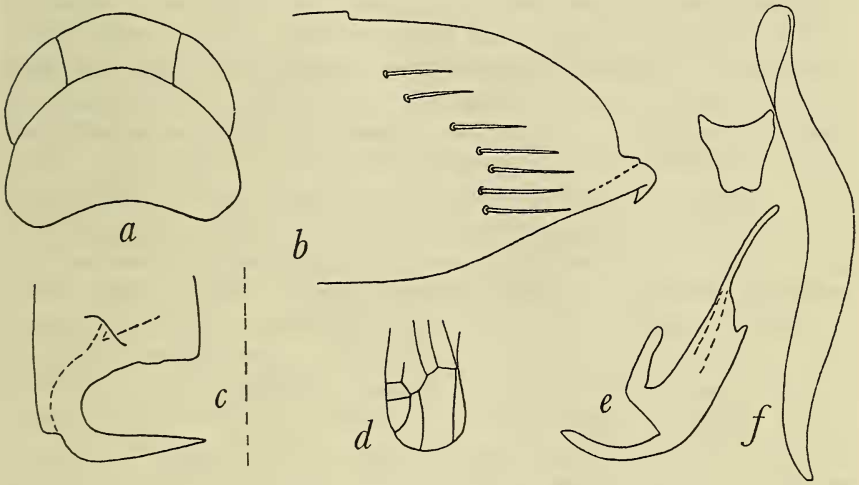

FIGURE 15.—*Lareba variata: a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, pygofer process, ventral aspect (midline broken); *d*, apex of forewing; *e*, aedeagus, lateral aspect; *f*, style and connective, dorsal aspect.

and acute apically. Aedeagus with preatrium and dorsal apodeme subequal in length; shaft with ventral ramus very short. Sternal apodemes broad, short, not traversing one conjunctiva.

Crown ivory with a pair of distinct black spots on anterior portion of disc. Pronotum with anterior two-thirds yellow suffused with orange; posterior third ivory. Scutellum and ground color of forewings yellow, a spot across claval suture near base, a transverse transcommissural vitta bordered with black anteriorly, crossing midclavus

and extending through brachial cell and into cell M in each wing, a small spot at midlength of clavus, apices of cells R and M, outer apical cell and bases of first, second, and third apical cells hyaline; an oblique stripe extending from just behind midcosta to claval apex, thence bordering basal veins of inner three apical cells, and apices of inner three apical cells, smoky. Face and venter pale.

The holotype, a male from Cutzamala, Guerrero, Mexico, has been examined from the DeLong collection. The species is known only from Guerrero.

Lawsonellus, new genus

FIGURE 16

Type of the genus, *Dikraneura attenuata* Osborn.

Hind wing with submarginal vein distinct at apex but forming a part of apical wing margin to apex of vein M_{1+2}; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein at point considerably proximad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell broadened gradually towards apex; second apical cell short, less than half length of inner apical cell, parallel-sided; third apical cell sessile; outer apical cell longer than broad, not attaining apical wing margin, its base distinctly proximad of base of third apical cell. Male plates elongate, triangular, attaining posterior pygofer margin, each with a single row of macrosetae extending from near base almost to apex. Pygofer very strongly produced; macrosetae numerous and irregularly arranged; pygofer processes absent. Ninth tergum with an elongate membranous area along middorsum. Anal processes absent. Style short, without preapical lobe. Connective T-shaped, the unpaired portion directed cephalad. Aedeagus with preatrium greatly elongate, longer than shaft; dorsal apodeme simple, short, strap-like; shaft bisinuate, broader at base, with an elongate unpaired aciculate ventral process appearing as a continuation of the long preatrium. Head strongly produced; ocelli on rounded margin between crown and face, closer to inner margins of eyes than to median line of head. Pronotum wider than head including eyes; lateral margins slightly divergent posteriorly. Face flat in profile.

Known only from the genotype, from Bolivia. This genus is dedicated to the late Dean Paul B. Lawson of Kansas University, who contributed much to our knowledge of Homoptera through both his own efforts and his encouragement of his associates.

In 1952 (loc. cit.), with poor material at hand, I placed this species in *Elabra* because the form of the head and the venation of the forewings were similar to other species of that genus. Subsequent study of a perfect male from the Stettin Natural History Museum reveals

so many differences—the bizarre aedeagus, the T-shaped connective, the shorter male plates relative to the pygofer, the absence of pygofer processes—that it is deemed advisable to erect a separate genus for the above species. The unpaired ventral aedeagal process suggests a relationship with *Habralebra*, but in other characters the species of that genus are quite distinct.

***Lawsonellus attenuatus* (Osborn), new combination**

FIGURE 16

Dikraneura attenuata Osborn, Ann. Carnegie Mus., vol. 18, p. 269, 1928.
Dikraneura albidula Osborn, op. cit., p. 271.
Elabra attenuata; Young, Univ. Kansas Sci. Bull. 35, p. 35, 1952.

Length of male 3.7 mm. Crown with median length more than twice interocular width, and slightly greater than median length of pronotum. Male genitalia as in generic description. Sternal abdominal apodemes short, not traversing one conjunctiva.

Crown, pronotum, and scutellum ivory, with a broad median sordid yellow vitta on crown expanded posteriorly and continuing over pronotum to its hind margin, the lateral margins suffused with orange on the pronotum. Forewings yellowish translucent with a poorly delimited deeper yellow tint along commissure to claval apex in each

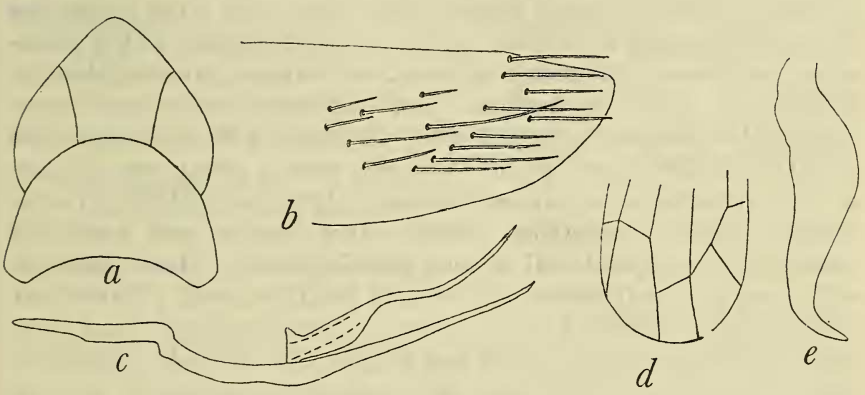

FIGURE 16.—*Lawsonellus attenuatus: a*, anterior dorsum (type); *b*, pygofer, lateral aspect (type); *c*, aedeagus, lateral aspect; *d*, apex of forewing; *e*, apical portion of style, lateral aspect.

wing and a similar marking in corium parallel to costal margin from base to midlength of wing; second apical cell with a yellow cloud in base. Face and venter pale.

Known only from the type, the type of the synonym, both in Car-

negie Museum, and a male specimen in the Stettin Natural History Museum, all from Bolivia.

Genus *Habralebra* Young

FIGURES 17–20

Habralebra Young, Univ. Kansas Sci. Bull. 35, p. 33, 1952 (type *Protalebra nicaraguensis* Baker by original designation).

Hind wing with submarginal vein almost or completely confluent with apical wing margin to apex of vein M_{1+2}; posterior branch of vein R nearly always evanescent apically; vein Cu_2 confluent with submarginal vein at point considerably proximad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell almost parallel-sided; second apical cell less than two-thirds length of inner apical cell (exception: *H. bifasciatella*, new species); third apical cell sessile; outer apical cell triangular, its base opposite to or very slightly basad of base of third apical cell. Male plates elongate-triangular, attaining or slightly exceeding posterior pygofer margin, each narrowed in apical half with longitudinal row of macrosetae on middle half, apex lobate and turned dorsad. Pygofer with posterior margin produced or rounded, disc with single vertical row of macrosetae; a process usually arising near conjunctiva dorsally, extending ventrad; ventral margin rolled mesad and often giving rise to a process which is directed caudad. Ninth tergum with a transverse bar-like or triangular tergite which is almost always delimited laterally by a line of flection. Anal processes present or absent. Style with or without preapical lobe. Aedeagus with dorsal apodeme usually well developed, Y- or T-shaped; atrium giving rise to large ventral unpaired atrial process (absent in *bifasciata* (Gillette)) that is usually thicker (exceptions: *willinki*, new species, and *terminalis* (Osborn)) than apical half of long tapering shaft. Head produced with apex rounded; crown with median length exceeding interocular width; ocelli on rounded margin between crown and face, about equidistant from inner eye margins and median line of head. Pronotum longer than crown, wider than head including eyes, lateral margins strongly divergent posteriorly. Face slightly convex in lateral aspect. Color pale, with golden reflections, usually with black or orange markings.

Distribution: West Indies, Central America, and South America.

The relationship of *Habralebra* to the other alebrine genera is problematical. Considering *H. alliodorae* (Caldwell and Martorell) alone, the almost bifurcate aedeagal shaft, the chaetotaxy of the pygofer, the form of the ventral pygofer processes, and the absence of a preapical lobe in the style, are suggestive of *Diceratalebra*, but *alliodorae* is undoubtedly much more closely related to the other species of

Habralebra included here. These stand as a group well apart from all other genera in the characteristic venation of the forewings, form of the aedeagus, bright golden color marked with black or orange, and apart from *Diceratalebra* particularly in the additional characters of the dorsal aedeagal apodeme (not elongate, as in *Diceratalebra*) and the tubular form of the aedeagal shaft, which is laterally compressed in *Diceratalebra*.

The holotype of *Protalebra transversalis* Baker (Invertebrata Pacifica, vol. 1, p. 6, 1903), a female, has been examined and it appears to belong in this genus. Males are needed from the type locality, Acapulco, Mexico, to establish its identity.

Key to species of *Habralebra*

1. Aedeagus with unpaired ventral process wanting . . . **bifasciata** (Gillette)
   Aedeagus with unpaired ventral process present 2
2. Aedeagal process less than half length of shaft 3
   Aedeagal process more than half length of shaft 4
3. Aedeagal process vestigial, occurring as a minute tooth; pygofer process in lateral aspect exceeding posterior pygofer margin; style with apical extension weakly curved . . . . . **terminalis** (Osborn)
   Aedeagal process pronounced; pygofer process in lateral aspect not attaining posterior pygofer margin; style with apical extension strongly curved. **trimaculata** (Gillette)
4. Aedeagus with unpaired ventral process elongate-setiform, narrower than shaft measured at midlength . . . . . **willinki,** new species
   Aedeagus with unpaired ventral process long or short, not setiform, broader than shaft measured at midlength 5
5. Aedeagal shaft in ventral aspect with apical portion appearing cruciate. **cruciata,** new species
   Aedeagal shaft not so 6
6. Pygofer without ventral processes 7
   Pygofer with distinct ventral processes 9
7. Style with apical extension broadly expanded at apex 8
   Style with apical extension not expanded at apex. **bifasciatella,** new species
8. Aedeagus with preatrium elongate; ventral aedeagal process with width at midlength distinctly less than twice width of shaft in lateral aspect, long, slender and gradually tapering . . . . . **gillettei,** new species
   Aedeagus with preatrium wanting; ventral aedeagal process with width at midlength distinctly greater than twice width of shaft in lateral aspect, short, broad, abruptly tapered at apex . . . . . **williamsi,** new species
9. Pygofer with ventral process exceeding posterior pygofer margin, decurved. **alliodorae** (Caldwell and Martorell)
   Pygofer with ventral process not attaining posterior pygofer margin, not decurved 10
10. Style with apical extension gradually tapered at apex; pygofer process elongate in lateral aspect; dorsal aedeagal apodeme Y-shaped with very short arms 11

Style with apical extension abruptly rounded at apex; pygofer process very short in lateral aspect; dorsal aedeagal apodeme Y-shaped with very long arms . . . . . **amoena** (Baker)

11. Aedeagus with shaft gently curved; connective trapezoidal; ventral pygofer process doubly right-angled in ventral aspect . . **panamensis,** new species

Aedeagus with shaft straight; connective Y-shaped; ventral pygofer process more smoothly curved in ventral aspect . . . . . **nicaraguensis** (Baker)

Habralebra nicaraguensis (Baker)

FIGURE 17,*a–f*

Protalebra nicaraguensis Baker, Invertebrata Pacifica, vol. 1, p. 6, 1903.
Habralebra nicaraguensis; Young, Univ. Kansas Sci. Bull. 35, p. 34. 1952.

Length of male 3.1 mm. Crown with median length slightly more than one-third greater than interocular width and three-fourths median length of pronotum. Male pygofer with posterodorsal margin produced posteriorly and rounded apically; ventral pygofer process in lateral aspect extending caudodorsad, not attaining pygofer margin, gradually tapered from base to apex; in ventral aspect the two ventral processes subparallel, each process with a lateral anteapical lobe and a slender curved tapering apical portion; dorsal pygofer margin thickened and giving off a slender differentially sclerotized integumental bar directed anteroventrad to middle of pygofer disc. Ninth tergum with a distinct narrow transverse tergite. Anal processes absent. Style without distinct preapical lobe, slightly broadened at midlength. Connective Y-shaped. Aedeagus with preatrium distinct; dorsal apodeme well developed, Y-shaped, the arms short and broad; atrium giving off an unpaired broad falcate process conspicuously thicker than apical half of shaft, extending dorsad almost as far as shaft; shaft straight. Sternal abdominal apodemes not traversing one conjunctiva.

Crown and pronotum ivory suffused with yellow. Scutellum brown, a pair of longitudinal lines before transverse sulcus, and the anteapical portion, black; apex and two anteapical marginal spots ivory. Forewing yellowish translucent with a smoky longitudinal vitta along commissure in basal half of clavus, the marking expanded laterally towards claval suture at apex; apex of clavus and of adjoining brachial cell, basal half of inner apical cell and base of second apical cell smoky, forming an hourglass-shaped pattern on the wings in repose; wing apices smoky. Face and venter pale yellow.

The holotype, a female from San Marcos, Nicaragua, is in the Pomona College collection. The above description is based on a male specimen, from Mexico, in the collection of D. M. DeLong.

***Habralebra panamensis*, new species**

FIGURE 17,*g–j*

Length of male 3.0–3.1 mm., of female 3.2 mm. Proportions of head and pronotum as in *H. nicaraguensis* (Baker). Female seventh sternum with caudolateral angles broadly rounded, posterior margin transverse; pygofer heavily setose with all of setae pale. Male pygofer with posterior margin slightly produced dorsally and subtruncate; ventral pygofer process much as in *nicaraguensis* in lateral aspect; in ventral aspect curved abruptly mesad, then abruptly caudad, each curve through 90°; dorsal thickening of pygofer wall as in *nicaraguensis* but with the ventral portion digitiform, not acute apically. Ninth tergite as in *nicaraguensis*. Anal processes submembranous. Style as in *nicaraguensis* but with apex more rounded. Connective trapezoidal. Aedeagus as in *nicaraguensis*, but with shaft gently curved caudad throughout its length and exceeding the unpaired ventral process in length. Sternal abdominal apodemes traversing one conjunctiva.

Color variable. Crown and pronotum ivory suffused with orange. Scutellum varying from orange marked with black (type) as in *nicaraguensis*, to orange yellow with an anteapical dark spot, or pale yellow with basal angles gray (allotype). Forewings varying from the design in *nicaraguensis* but with the transcommissural claval marking hourglass-shaped and deeper hued than the more posterior similarly shaped marking (type) to a design where the more anterior transcommissural marking is orange except a black apical portion, or (allotype) a design in which the anterior marking is reduced to a dark spot in base of corium and a narrow transverse line at midclavus. Face and venter pale yellow.

Holotype male, allotype female, and one male paratype from Mindi Dairy, Panama Canal Zone, Dec. 3, 1951 (F. S. Blanton) are in U. S. National Museum (No. 62677).

H. panamensis is very closely related to *nicaraguensis* from which it may be most readily distinguished by the characters in the key, above.

***Habralebra williamsi*, new species**

FIGURE 17,*k–n*

Length of male 3.8 mm. Crown with median length about one-fourth greater than interocular width and two-thirds median length of pronotum. Male pygofer with posterior margin subtruncate, posterodorsal and posteroventral margins rounded; ventral pygofer process bisinuate, in ventral aspect with basal portion longer and

directed caudad, apical portion directed mesad thence caudad; with one dorsal pygofer process as in *panamensis*, and a second process consisting of a barlike integumental thickening extending from near base caudoventrad to middle of disc. Ninth tergite as in *nicaraguensis* Anal process very short, truncate apically. Style with distinct

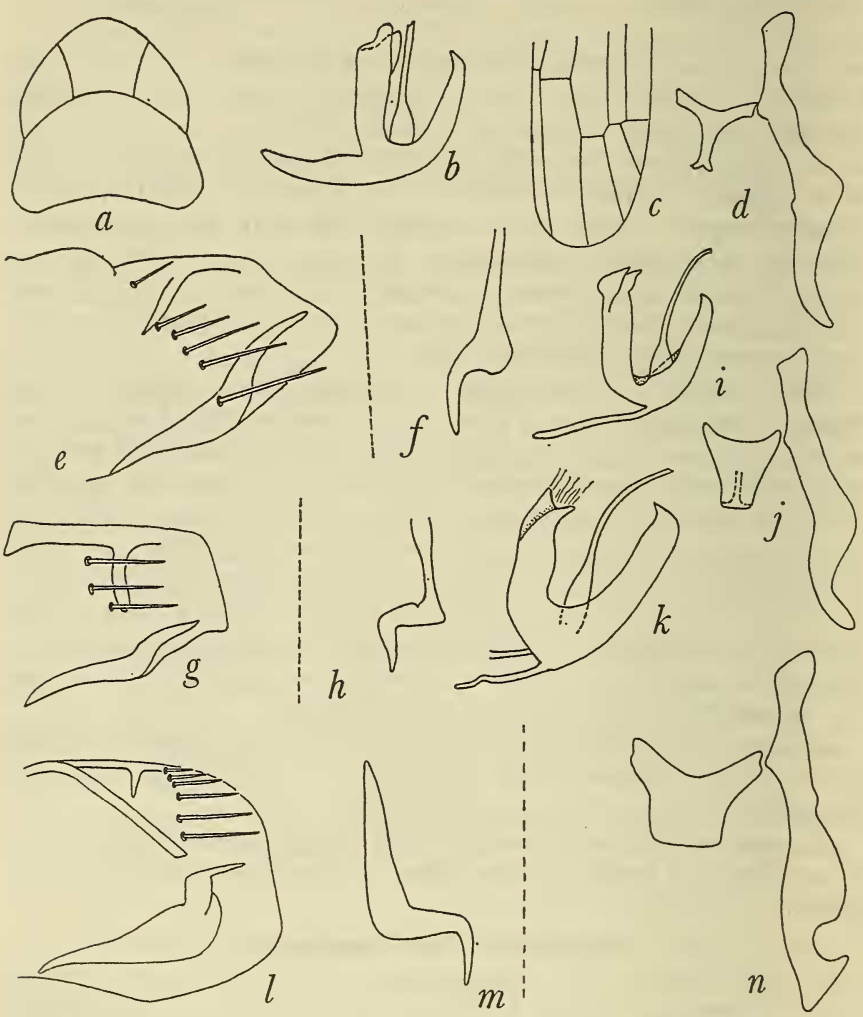

FIGURE 17.—*Habralebra*. *a–f*, *H. nicaraguensis*: *a*, anterior dorsum; *b*, aedeagus, lateral aspect; *c*, apex of forewing; *d*, style and connective, dorsal aspect; *e*, pygofer, lateral aspect; *f*, pygofer process, ventral aspect. *g–j*, *H. panamensis*: *g*, pygofer, lateral aspect; *h*, pygofer process, ventral aspect; *i*, aedeagus, lateral aspect; *j*, style and connective, dorsal aspect; *k–n*, *H. williamsi* (type): *k*, aedeagus, lateral aspect; *l*, pygofer, lateral aspect; *m*, pygofer process, ventral aspect; *n*, style and connective, dorsal aspect. (In *f*, *h*, and *m* the broken lines represent the midventral line of the specimen.)

preapical lobe and with apical extension strongly expanded apically, the apical margin obliquely truncate. Connective short Y-shaped, the unpaired portion broad. Aedeagus similar to that of *panamensis*, but with ventral process broader and longer.

Crown and pronotum dull orange, the latter with a pale spot along each anterolateral margin. Scutellum black except dull yellow basal angles and anteapical short transverse vitta, extreme apex ivory. Forewings golden hyaline, each with a broad transverse marking across midlength of clavus from claval suture to commissure and a conspicuous dot near base of corium, black; a broad marking along each commissure from claval apex to base of second apical cell, forming with its counterpart on opposite wing an hourglass-shaped dark smoky pattern; apical cells pale smoky except a narrow paler area separating the apical area from the darker area more cephalad. Face dull gray except a paler median vitta, remainder of venter pale.

Holotype male, Tena, Ecuador, Mar. 29, 1923 (F. X. Williams), in collection of the Hawaiian Sugar Planters Association.

From *panamensis* and *nicaraguensis* to which it is closely related, *williamsi* is readily distinguished by its expanded style apex and externally by the conspicuous black dot in the base of the corium of the forewing. The dot is very small in *panamensis*, absent in *nicaraguensis*.

***Habralebra alliodorae* (Caldwell and Martorell), new combination**

FIGURE 18,*a–d*

Protalebra alliodorae Caldwell and Martorell, Journ. Agr. Univ. Puerto Rico, vol 35, p. 88, 1952.

Length of male 2.9 mm. Crown with median length one-third greater than interocular width and four-fifths median length of pronotum. Female seventh sternum with lateral angles rounded, posterior margin transverse, slightly emarginate at middle; pygofer with few elongate pale macrosetae. Male pygofer in lateral aspect with posterior margin broadly rounded; ventral pygofer process strongly arched, the apex directed caudoventrad, exceeding posterior pygofer margin, in ventral aspect smoothly curved mesad then caudolaterad; with an additional barlike integumental thickening arising on disc near base extending caudoventrad beyond middle of disc. Ninth tergum with a distinct triangular tergite delimited by lines of flection. Anal processes absent. Style slender, gradually tapered, without a distinct preapical lobe, apex acute and slightly decurved. Connective a transverse bar. Aedeagus with preatrium distinct, dorsal apodeme elongate, T-shaped; shaft broad in basal half, apical half much narrower, arcuate, curving gradually caudad, with ventral process short, cultrate, curved strongly towards shaft.

Crown and pronotum dull gray, forewings hyaline with two transverse dark bands, the more anterior including the scutellum and basal third of the clavus, the more posterior in breadth extending from apex of clavus to midlength of inner apical cell, extending laterad, narrowing rapidly on anterior margin from middle of cell M to very narrow extremity on costal margin. Venter entirely pale.

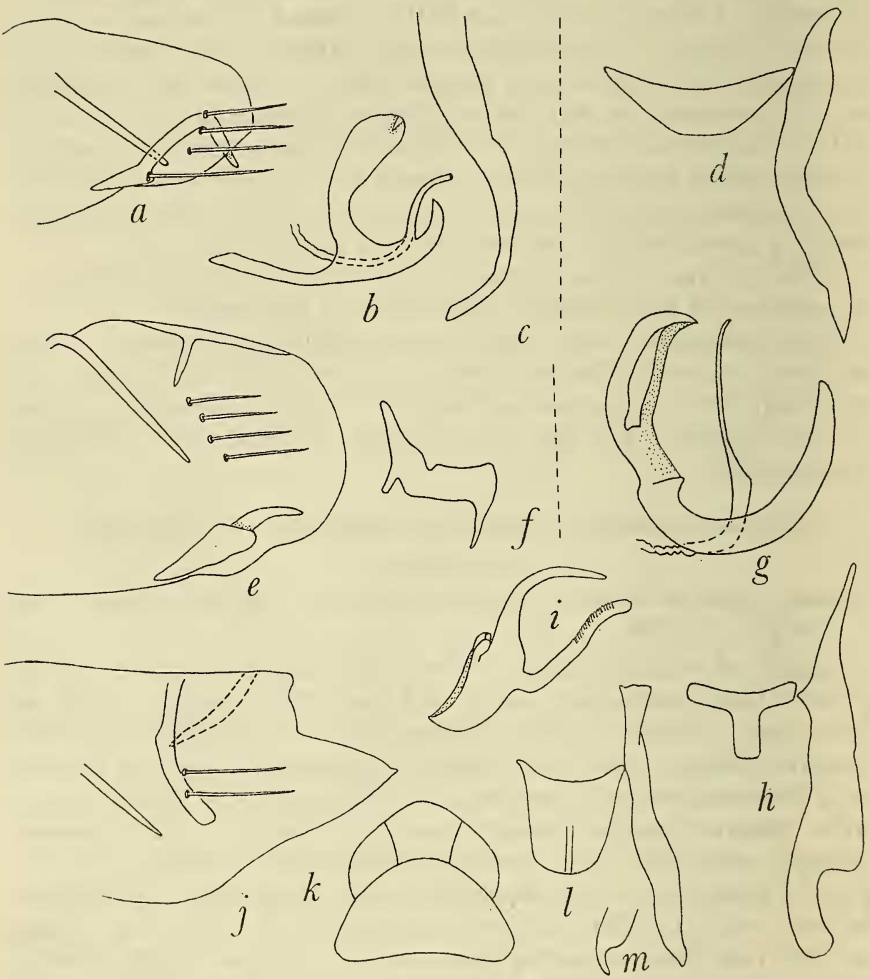

FIGURE 18.—*Habralebra*. *a–d*, *H. alliodorae*: *a*, pygofer, lateral aspect; *b*, aedeagus, lateral aspect; *c*, pygofer process, ventral aspect; *d*, style and connective, dorsal aspect. *e–h*, *H. amoena* (type): *e*, pygofer, lateral aspect; *f*, pygofer process, ventral aspect; *g*, aedeagus, lateral aspect; *h*, style and connective, dorsal aspect. *i–m*, *H. bijasciatella* (type): *i*, aedeagus, lateral aspect; *j*, pygofer, lateral aspect; *k*, anterior dorsum; *l*, style and connective, dorsal aspect; *m*, style apex, lateral aspect. (In figures *c* and *f* the midventral line is broken.)

The holotype, a male from Río Piedras, Puerto Rico, is in the U. S. National Museum. A specimen has also been examined from Cayamas, Cuba.

From the foregoing three species, to which it is closely related, *alliodorae* may be easily separated by its longer ventral pygofer process, and its very distinct aedeagus which differs in that the shaft and the unpaired ventral process are fused through approximately half the length of the former.

Habralebra amoena (Baker)

FIGURE 18,*e–h*

Protalebra amoena Baker, Psyche, vol. 8, p. 404, 1899.
Habralebra amoena; Young, Univ. Kansas Sci. Bull. 35, p. 34, 1952.

Length of male 3.5 mm. Crown with median length one-third greater than interocular width and three-fourths median length of pronotum. Male pygofer broadly rounded apically; ventral pygofer process short, not attaining posterior pygofer margin, with an apical beak directed caudad, other pygofer processes as in *H. williamsi* Young. Ninth tergite as in *H. nicaraguensis* (Baker). Anal processes absent. Style elongate with distinct preapical lobe, apical extension rounded at tip. Connective Y-shaped, the unpaired portion short. Aedeagus with preatrium absent; dorsal apodeme elongate Y-shaped; shaft abruptly narrowed on posterior margin near base, apical two-thirds slender, directed dorsad and very slightly caudad; unpaired ventral process stout, crescentiform, not attaining apex of shaft. Sternal abdominal apodemes very short, not traversing one conjunctiva.

Ground color of crown and pronotum golden yellow, crown with discal area washed pale orange, pronotum with discal area bright orange. Ground color of scutellum ivory, the basal angles buff, a narrow anteapical transverse band black. Forewing hyaline, a small black dot in corium near base, an irregular vitta adjoining commissure in basal half of clavus, orange; an indistinct vitta in brachial cell extending abruptly mesad through apical half of clavus to commissure, pale orange; an inverted C-shaped mark beginning at apex of brachial cell, extending along commissure in basal half of inner apical cell, then laterad into base of second apical cell, smoky; apical portions of first and second apical cells broadly smoky. Venter completely pale, the face and pleural portion of pronotum ivory.

This species is known only from the type, a male, from Chapada, Brazil, in the U. S. National Museum.

The style apex, with its preapical lobe and apical extension not broadened at apex, and the aedeagal shaft, narrowed on the posterior margin near base, will serve to separate *amoena* from the foregoing species of *Habralebra*.

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***Habralebra bifasciatella*, new species**

FIGURE 18,*i–m*

Length of male 2.7 mm. Crown with medium length one-sixth greater than interocular width and two-thirds median length of pronotum. Forewing with second apical cell measured along inner margin more than two-thirds length of inner apical cell measured along its outer margin. Male pygofer with posterior margin strongly produced in a triangular lobe; ventral pygofer processes absent; disc with very few macrosetae in vertical row; dorsal margin giving off a slightly curved digitate process on each side, each process extending caudoventrad slightly beyond middle of disc and free from pygofer wall in cephalic aspect; a short aciculate diagonal process consisting of thickened integument near center of disc. Ninth tergite as in *H. nicaraguensis* (Baker). Anal process distinct, slender, acute apically, not attaining middle of pygofer disc. Style slender, elongate, with small preapical lobe and short decurved apical extension. Connective semi-ovate. Aedeagus with preatrium wanting; dorsal apodeme transverse; shaft gradually tapered, regularly arched, the apex curved ventrad; ventral unpaired process digitiform, exceeding shaft in length, rugose anteapically. Sternal abdominal apodemes not traversing one conjunctiva.

Crown dull yellow. Pronotum golden. Scutellum fumose with a small median basal yellow spot, the area on each side of the transverse sulcus and extreme apex, dull yellow. Forewing golden translucent with a broad smoky band across basal third of clavus extending into corium, and a broad, slightly paler band across appendix and bases of apical cells, becoming narrower at costal margin. Face and venter stramineous.

Holotype male, Mojinga Swamp, near Fort Sherman, Panama Canal Zone (F. S. Blanton), in U. S. National Museum (No. 62678).

From the preceding species of *Habralebra*, *bifasciatella* is easily distinguished by its lack of a ventral pygofer process.

***Habralebra willinki*, new species**

FIGURE 19,*a–e*

Length of male 3.3 mm. Crown with median length almost one-third greater than interocular width and two-thirds median length of pronotum. Female seventh sternum more than twice length of sixth, with lateral margins produced and rounded to hind margin which appears as a shallow emargination; pygofer heavily setose on posterior two-thirds, with all of setae pale. Male pygofer with posterior margin slightly produced at midlength, the apex rounded; ventral pygofer process short, slightly sinuous, extending caudomesad, not attaining midventral line; dorsal pygofer process

and ninth tergite as in *H. nicaraguensis* (Baker). Anal process slender, truncate apically, not reaching middle of disc of pygofer. Style with distinct preapical lobe, apical extension not strongly broadened at apex, decurved, with a small preapical tooth on dorsal face. Connective triangular. Aedeagus with preatrium wanting; dorsal apodeme well developed with an anteroventrad-directed lobe and a pair of short lobes directed dorsad; shaft elongate, broader on basal portion, narrower and slightly arched caudodorsad in apical half; ventral process slender, aciculate, much shorter than shaft. Sternal abdominal apodemes not traversing one conjunctiva.

Ground color of crown and pronotum golden yellow, the anterolateral portions of pronotum paler. Scutellum with ground color ivory, basal angles golden, margined internally with dark, a preapical transverse marking black. Forewings transparent with golden reflections, a transverse vitta across commissure in basal third of clavus, evanescent anteriorly, becoming darker posteriorly, not attaining claval suture of either wing; inner anteapical portions of wings with dark margins in form of hourglass, apical cells faintly fumose. Venter entirely pale.

Holotyle male, Ledesma, Jujuy Province, Argentina, Feb. 10, 1950 (A. Willink and F. Monrós), in collection of Miguel Lillo Foundation, Tucumán, Argentina.

A female specimen from Nova Teutonia, Brazil, is in the Snow Entomological Collections, University of Kansas.

This species differs from all others in the genus in the slender setiform unpaired ventral process of the aedeagus.

***Habralebra trimaculata* (Gillette)**

FIGURE 19,*g–i*

Alebra trimaculata Gillette, Proc. U. S. Nat. Mus., vol. 20, p. 712, 1898.
Habralebra trimaculata; Young, Univ. Kansas Sci. Bull. 35, p. 34, 1952.

Length of female 3.5 mm. Crown with median length one-third greater than interocular width, and two-thirds median length of pronotum. Female seventh sternum very large, more than three times length of sixth sternum, posterolateral portions broadly rounded, posterior margin gradually and very slightly produced and rounded at middle; pygofer with numerous irregularly arranged pale macrosetae over apical two-thirds. Male pygofer in lateral aspect with ventral pygofer process short, having pronounced lateral lobe, apical portion slender, curved gradually posterolaterad, acute apically; with dorsal and oblique discal processes as in *H. williamsi* Young. Ninth tergite as in *H. nicaraguensis* (Baker). Anal processes arcuate, acute apically, not attaining middle of pygofer disc. Style elongate, with distinct preapical lobe and apical extension curved laterad, apex quadrate.

Connective triangular. Aedeagus with preatrium distinct; dorsal apodeme Y-shaped, the unpaired portion elongate; ventral process short, broad, not half length of shaft which is broader in basal half, slender, and slightly arched posterodorsad in apical half. Sternal abdominal apodemes not traversing one conjunctiva.

Crown, pronotum, and scutellum golden yellow tinged with ivory. Forewing transparent with golden reflections at base, along claval suture and along basal portion of costal margin; a commissural spot at apex of basal third of clavus and an oval one at apex of clavus, extending into brachial cell, black, a transverse spot through inner apical cell at midlength, extending into basal portion of second apical cell, smoky. Venter entirely pale except dark tarsal claws.

This species is known only from the type, a female, from Chapada, Brazil, in the U. S. National Museum, and a male from Ledesma, Jujuy Province, Argentina, in the collection of the Miguel Lillo Foundation, Tucumán, Argentina. It is not certain that the sexes are correctly associated, but the male agrees with the type in almost every detail.

The distinct but short unpaired aedeagal process, less than half the length of the shaft, will separate *trimaculata* from other species of *Habralebra*.

Habralebra terminalis (Osborn)

FIGURE 19,*j–n*

Alebra terminalis Osborn, Ann. Carnegie Mus., vol. 15, p. 451, 1924.

Length of male 3.6 mm. Crown with median length subequal to interocular width, and one-half median length of pronotum. Male pygofer with ventral portion of posterior margin produced and rounded; ventral pygofer process acute apically, exceeding posterior pygofer margin, arched in ventral aspect, the two processes appearing like reversed parentheses. Style not greatly exceeding connective in length, with preapical lobe distinct. Connective large, Y-shaped with unpaired portion very short. Aedeagus with preatrium short, dorsal apodeme small, shaft smoothly curved caudad, gradually tapered, with a minute denticle near its base on ventral surface. Sternal abdominal apodemes short, not exceeding two conjunctivae.

Ground color of crown yellowish ivory, a pair of discal spots deeper yellow. Pronotum golden with three submarginal oval ivory spots near anterior margin. Scutellum golden yellow with basal angles dull yellow and transverse sulcus broadly bordered behind with ivory. Forewing hyaline with indefinite yellow suffusions outlining paler areas from wing base to claval apex; apical portions of first and second apical cells, and base of second apical cell, smoky. Face and venter dull yellow.

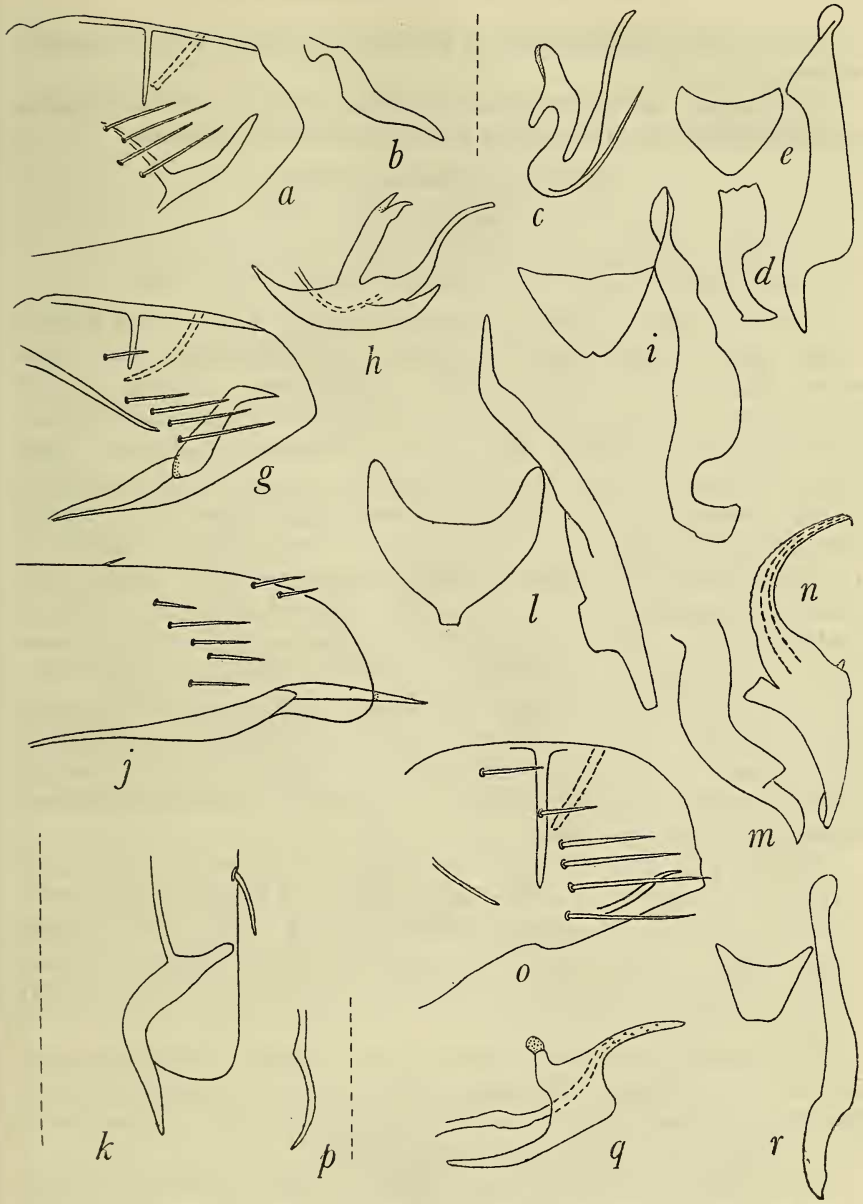

FIGURE 19.—*Habralebra*. *a–e*, *H. willinki:* *a*, pygofer, lateral aspect (broken line is anal process); *b*, pygofer process, ventral aspect; *c*, aedeagus, lateral aspect; *d*, style apex, lateral aspect; *e*, style and connective, ventral aspect. *g–i*, *H. trimaculata:* *g*, pygofer, lateral aspect (broken line is anal process); *h*, aedeagus, lateral aspect; *i*, style and connective, dorsal aspect. *j–n*, *H. terminalis* (type): *j*, pygofer, lateral aspect; *k*, left side of pygofer, ventral aspect; *l*, style and connective, dorsal aspect; *m*, style apex, lateral aspect; *n*, aedeagus, lateral aspect. *o–r*, *H. bifasciata* (type): *o*, pygofer, lateral aspect (broken line is anal process); *p*, pygofer process, ventral aspect; *q*, aedeagus, lateral aspect; *r*, style and connective, dorsal aspect. (In *b*, *k*, and *p* the midline of the specimen is represented by a broken line.)

Known only from the type, a male from Bolivia, in the Carnegie Museum.

This species, in the vestigial toothlike unpaired ventral aedeagal process, differs drastically from other species of *Habralebra*.

Habralebra bifasciata (Gillette)

FIGURE 19,*o–r*

Alebra bifasciata Gillette, Proc. U. S. Nat. Mus., vol. 20, p. 711, 1898.
Habralebra bifasciata; Young, Univ. Kansas Sci. Bull. 35, p. 34, 1953.

Length of male 3.3 mm., of female 3.5 mm. Crown with median length approximately one-sixth greater than interocular width and about three-fourths median length of pronotum. Female seventh sternum more than twice length of sixth, hind margin produced and broadly rounded; pygofer setae as in *H. trimaculata* (Gillette). Male pygofer in lateral aspect with posterodorsal margin broadly rounded, posteroventral margin forming an almost right-angled lobe; ventral pygofer process short, acute apically, the two processes shaped like reversed parentheses; dorsal pygofer process extending ventrad past middle of pygofer disc; with an anterior oblique barlike process before middle of disc. Ninth tergum with triangular tergite. Anal processes weak. Style slender and elongate, without distinct preapical lobe. Connective broadly U-shaped. Aedeagus with preatrium elongate, dorsal apodeme short, Y-shaped, the arms widespread, shaft slender, short, gradually decurved, provided with dispersed minute basally-directed projections, ventral process rudimentary, occurring as short, broad rounded projection.

Entirely pale yellow except two broad transverse brownish black stripes on dorsum, one across basal portion of forewings and entire scutellum, its hind margin traversing clavus at about apex of basal third length of latter; the other across anteapical portion of forewings, over apex of clavus and basal half of inner apical cell, abruptly narrowed at costal extremity.

This species is known only from the male type and a female paratype in the U. S. National Museum. Both were collected in Chapada, Brazil; the former in April, the latter in August. The other specimens in the type series belong to another species.

The complete absence of an unpaired ventral aedeagal process serves to set this species apart from others in the genus.

Habralebra gillettei, new species

FIGURE 20,*a–c*

Alebra bifasciata (part.) Gillette, Proc. U. S. Nat. Mus., vol. 20, p. 711, 1898.

Length of male 3.2–3.5 mm., of female 3.3–3.5 mm. Crown with median length slightly greater than interocular width and three-

fourths median length of pronotum. Female seventh sternum with a broad median keel ending posteriorly in a blunt tooth; lateral margins produced posteriorly, each into a distinct rounded lobe; pygofer setae as in *H. panamensis* Young. Male pygofer in lateral aspect with posterodorsal portion slightly produced in a short lobe; ventral pygofer process wanting; dorsal process extending ventrad beyond middle of pygofer disc; disc with a short barlike integumental

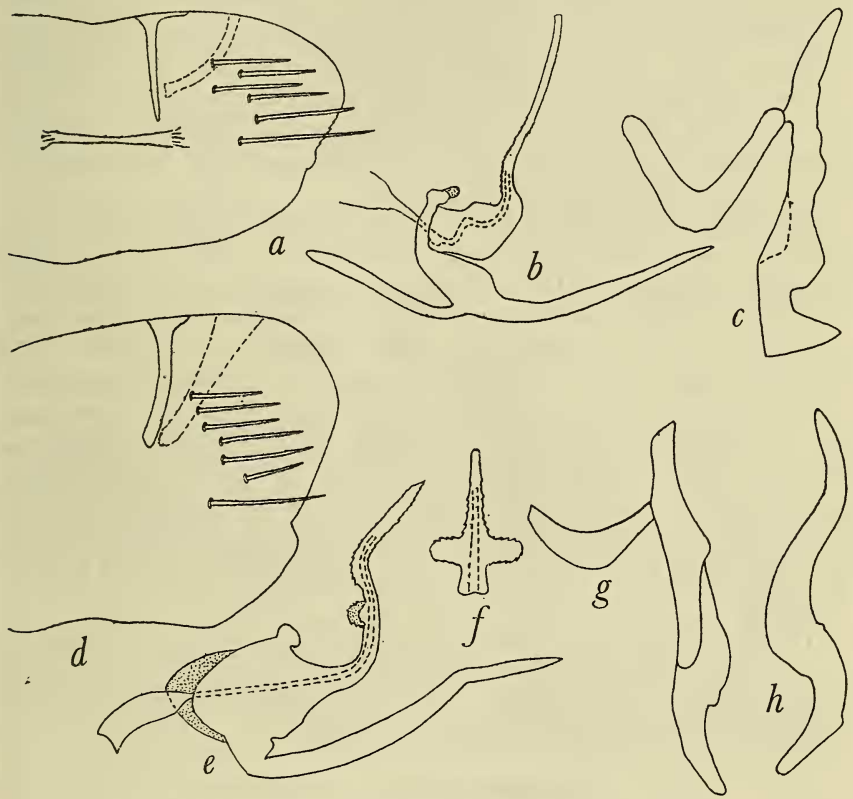

FIGURE 20.—*Habralebra*. *a–c*, *H. gillettei* (type): *a*, pygofer, lateral aspect; *b*, aedeagus, lateral aspect; *c*, style and connective, dorsal aspect. *d–h*, *H. cruciata: d*, pygofer, lateral aspect; *e*, aedeagus, lateral aspect; *f*, apex of aedeagus, caudal aspect; *g*, style and connective, dorsal aspect; *h*, style, lateral aspect. (In *a* and *d* the broken line represents the anal process.)

thickening. Ninth tergite as in *H. nicaraguensis* (Baker). Anal process as in *H. bifasciatella* Young. Style short, with distinct preapical lobe and with short foot-shaped apical extension that is variable apically, either with apical margin broadly convex or shallowly concave (type). Connective V-shaped. Aedeagus with preatrium elongate, dorsal apodeme short T-shaped, shaft broad in

basal third, slenderly cylindrical in apical two-thirds; unpaired ventral process strongly divergent from shaft, expanded basally, gradually tapered to acute apex. Sternal abdominal apodemes very short, not traversing one conjunctiva.

Ground color of crown and pronotum pale yellow to sordid orange. Scutellum, except pale yellow to white basal angles and median basal spot, black, apex ivory. Forewings translucent lacteus to transparent, each with basal third of clavus, an adjoining dot on corium (occasionally absent), a small spot near costal margin in basal third, and a large blotch along commissural margin extending from apex of clavus to midlength of inner apical cell and from commissure to base of outer cell, black, the apical blotches of the forewings in repose shaped like an hourglass. Venter entirely pale, the discal portion of the face occasionally slightly darker.

Holotype male (USNM 62679) from Chapada, Brazil, April, and paratype male, same data (both misdetermined paratypes of *Alebra bifasciata* Gillette), in U. S. National Museum; paratype male from Campinas, Brazil, in Pomona College collection; numerous male paratypes from Rio Caraguata, Mato Grosso, Brazil, March 1952 (F. Plaumann), in U. S. National Museum and in Snow Entomological Collections; female paratypes from Salta Province, Argentina, Jan. 9, 1949 (M. Aczel), and Ledesma, Jujuy Province, Argentina, Feb. 10, 1950 (A. Willink and F. Monrós), and two male paratypes from Salta Province, Argentina, Jan. 31, 1950 (R. Golbach) in collection of Miguel Lillo Foundation, Tucumán, Argentina; and one male paratype from Provincia del Sara, Bolivia, in Stettin Natural History Museum.

This species is closely related to *cruciata* but differs in the expanded apex of the style and the aedeagal shaft which lacks the transverse expansion found in *cruciata*. The more anterior transcommissural marking of the forewings is orange in *cruciata*.

***Habralebra cruciata*, new species**

FIGURE 20,*d–h*

Length of male 3.5 mm. Crown with length about one-fourth greater than interocular width and about two-thirds median length of pronotum. Male pygofer with posterior margin broadly rounded, weakly bilobate; ventral and discal processes absent; dorsal process as in *H. gillettei* Young but not attaining middle of disc of pygofer. Ninth tergite occurring as a transverse rod, not delimited by a line of flection laterally. Anal processes submembranous. Style elongate, with weak preapical lobe and with apical extension gradually curved ventrad, its dorsal surface with a small protuberance near midlength; style apex rounded. Connective shallowly U-shaped.

Aedeagus with preatrium wanting, atrium with lateral margins flared cephalolaterad; dorsal apodeme very short T-shaped; shaft bisinuous with a pair of auriculiform appendages near midlength, the shaft appearing cruciate in caudal aspect; ventral aedeagal process as long as shaft, abruptly curved caudad before apex. Sternal abdominal apodemes traversing two conjunctivae.

Ground color of crown and pronotum pale yellow, a broad pink spot on disc of pronotum. Scutellum with basal angles dull yellow, the intervening area brown, apical half ivory, a transverse anteapical stripe and a pair of triangles, one on each side before middle of lateral margin, black. Forewings hyaline, a large transcommissural brick-red spot across claval bases, its hind margin bordered with black; apical cells, except outermost, fumose, the darker area extending cephalad into claval apex, apex of brachial cell and adjacent portion of cell M; an indistinct streak along basal portion of costal margin and a similar area in brachial cell, golden yellow. Venter entirely pale.

Holotype male, Campinas, Brazil, in Pomona College collection.

Omegalebra, new genus

FIGURES 21–23

Type of the genus, *Protalebra vexillifera* Baker.

Hind wing with submarginal vein usually confluent with apical wing margin; posterior branch of vein R evanescent apically; vein Cu_2 confluent with submarginal vein at point much proximad of vein m-cu. Forewing with appendix not extending around wing apex which is smoothly rounded; inner apical cell broader at base than at apex; second apical cell usually parallel-sided, its length measured along inner margin two-thirds or more length of inner apical cell measured along the common margin; third apical cell stalked; outer apical cell longer than broad, not attaining apical wing margin; cells R and M with anteapical widths about equal; color including a conspicuous omega-shaped marking (exception: *lenticula*). Female seventh sternum greatly produced posteriorly, in length equal to or greater than length of exposed portion of ovipositor in those species in which female is known; pygofer with numerous well dispersed pale macrosetae except near base, a few of these contrasting black in some species. Male plates elongate, triangular, at least attaining, usually exceeding, posterior pygofer margin, each with a longitudinal row of pale macrosetae which either extends full length of plate or occupies only the middle half, in some species with some of the setae contrasting black. Male pygofer with dispersed macrosetae, not in rows (exception: *ogloblini*); pygofer processes present, their origin variable interspecifically but not arising on dorsal pygofer margin. Ninth

tergum with a pair of dorsolateral lines of flection. Anal processes present or absent. Style with a distinct preapical lobe. Connective U-, V-, or Y-shaped, usually extending caudad one-half length of shaft or more. Aedeagus variable interspecifically. Head produced, triangular, crown with median length equal to or exceeding interocular width; ocelli on rounded margin between crown and face. Pronotum longer than crown, wider than head including eyes, lateral margins divergent posteriorly; posterior margin usually bisinuately concave, occasionally smoothly concave.

Distribution: West Indies, Central America, and South America.

In addition to the species included in the key below, *Protalebra omega* Van Duzee (Bull. Buffalo Soc. Nat. Sci., vol. 8, p. 75, 1907), described from females and of which additional females have been examined from Jamaica during this study, should be placed here.

The omega-shaped markings of the forewings are also found in *Protalebra* and *Paralebra*.

Key to species of *Omegalebra*

1. Aedeagus with a large ventral process which is forked apically and with a pair of processes arising at base of shaft . . . . . **ogloblini,** new species.
   Aedeagus without such processes, occasionally with processes arising apically or anteapically on shaft 2
2. Aedeagus strongly arched in lateral aspect. 3
   Aedeagus straight or very slightly curved, not strongly arched 4
3. Male pygofer process arising ventrally, unbranched; pygofer with posterodorsal portion not strongly produced; aedeagal shaft unarmed; length of male 3.2–3.3 mm.; anterior portion of omega-shaped marking completely bordered with black. . . . . **matogrossana,** new species
   Male pygofer process arising dorsally, bifurcate; pygofer with posterodorsal portion strongly produced; aedeagal shaft with a few retrorse anteapical teeth on dorsal margin; length of male 3.8–3.9 mm.; anterior margin of omega-shaped marking with black border interrupted medially. **barbata,** new species
4. Pygofer process arising ventrally, or apically and with a posteroventral thickening of pygofer wall; aedeagus with minute processes on shaft 5
   Pygofer processes arising apically and without posteroventral thickening of pygofer wall; aedeagus without processes 7
5. Aedeagal processes anteapical and lateral on shaft; connective thickly U-shaped . . . . . **balloui,** new species
   Aedeagal process apical, laterally compressed; connective Y-shaped with unpaired portion thick. 6
6. Aedeagus with dorsal apodeme T-shaped, shaft undulate apically, the dorsal and ventral apical processes asymmetrical; posterior border of transverse portion of omega-shaped marking not red . . . . . **morrisoni,** new species
   Aedeagus with dorsal apodeme laterally compressed; shaft straight, the apical processes symmetrical, posterior border of transverse portion of omega-shaped marking red . . . . . **blantoni,** new species

7. Pygofer with process bifurcate; dorsal aedeagal apodeme circular in caudal aspect; transverse portion of omega-shaped marking red-bordered posteriorly **vexillifera** (Baker)
   Not with above characters. 8
8. Pygofer process longer, arising as a thickening of posterodorsal pygofer margin; dorsal aedeagal apodeme saddle-shaped in lateral aspect; extreme apex of style not notched . . . . . **lenticula** (Osborn)
   Pygofer process short, arising apically on the posterior pygofer margin, the margin not thickened; dorsal aedeagal apodeme not saddle-shaped in lateral aspect; extreme apex of style notched . . . . . **cordiae** (Osborn)

***Omegalebra vexillifera* (Baker), new combination**

FIGURE 21,*a–h*

Protalebra vexillifera Baker, Psyche, vol. 8, p. 404, 1899.

Length of male 3.4 mm. Crown with apex sharply rounded; median length approximately equal to interocular width. Pronotum with median length almost twice median length of crown; posterior margin smoothly or sinuately concave. Ocelli about midway between inner margins of eyes and median line of head.

Male plates gradually tapered, extending as far caudad as posterior pygofer margin, each with row of macrosetae from near base to apex. Pygofer with posterior margin broadly rounded; pygofer process arising on posterior pygofer margin, biramous, the ventral branch more elongate and extending mesad. Ninth tergite present, bounded laterally and apically by lines of flection. Anal processes short, weak, expanded apically, not attaining middle of pygofer disc. Style with foot-shaped apical extension. Connective Y-shaped, the unpaired portion broad, extending caudad more than half length of shank of style. Aedeagus with preatrium short, dorsal apodeme semicircular, shaft slender, short, nearly straight, without processes. Sternal abdominal apodemes traversing one conjunctiva.

Ground color of crown, pronotum and scutellum ivory, a V-shaped marking on anterior portion of pronotum, and a short submarginal vitta near and parallel to humeral margin on each side, pale orange; a marginal black spot on each side of scutellum and a preapical transverse stripe, black. Forewing with ground color pale yellowish translucent, with a conspicuous omega-shaped lacteus marking crossing commissure at scutellar apex on each wing, attaining costal wing margin opposite midclavus, thence extending along vein M to its apex thence directed laterad and ending in apex of cell R, the transverse portion bordered anteriorly with black, posteriorly with crimson; veins forming bases of apical cells pale, margined with dull yellow, the yellow coloration darkening laterally and becoming fumose and filling third apical cell. Face and venter pale except bases of post-

tibial spines and some of spines themselves, black. Pleural portion of pronotum pink.

Known from the type series, from Chapada, Brazil, in the U. S. National Museum.

Omegalebra lenticula (Osborn), new combination

FIGURE 21,*i–k*

Protalebra lenticula Osborn, Journ. Dep. Agr. Porto Rico, vol. 13, p. 103, 1929.

Length of both sexes 2.8–3.1 mm. Crown with apex obtusely rounded, median length slightly greater than interocular width. Pronotum with median length about one-third greater than median length of crown. Ocelli closer to median line than to eyes. Female pygofer without contrasting black macrosetae. Male plates exceeding apex of posterior pygofer margin, each with row of macrosetae from near base almost to apex. Male pygofer with ventral half of posterior margin produced posteriorly in short weak lobe; pygofer process arising along posterodorsal margin, extending ventrad, the apical half elongate-triangular, the apex extending ventrad slightly beyond ventral pygofer margin; macrosetae in irregular arrangement parallel to dorsal and posterior pygofer margin. Ninth tergite absent. Anal processes absent. Style short, with short curved apical extension which bears a protuberance near its base. Connective Y-shaped with unpaired portion short. Aedeagus with preatrium short, dorsal apodeme saddle-shaped in lateral aspect, slightly flattened on dorsal surface; shaft slender, almost straight, without processes. Sternal abdominal apodemes not attaining first conjunctiva.

Ground color of crown, pronotum and scutellum ivory; disc of crown with broad triradiate pale yellow to orange marking, its lateral arms attaining inner margins of eyes, its posterior arm attaining posterior margin of crown; pronotum with broad U-shaped similarly-colored marking extending from anterior margin to posterior half of disc, posterolateral angles yellow to orange; scutellum with basal angles yellow to ivory, transverse sulcus narrowly, a triangle on each lateral margin slightly basad of transverse sulcus and a broad anteapical transverse stripe, black. Forewings with omega-shaped marking obsolete, ground color whitish translucent, a transverse band, narrow at base of costal plaque, gradually broadened mesally and occupying basal third of clavus, fuscous posteriorly, abruptly fading anteriorly; apical half of clavus except tip, and adjacent corium pale yellow, the intervening claval suture contrastingly paler; a diagonal black vitta, interrupted on disc, extending from posterior margin of costal plaque caudomesad, becoming gradually

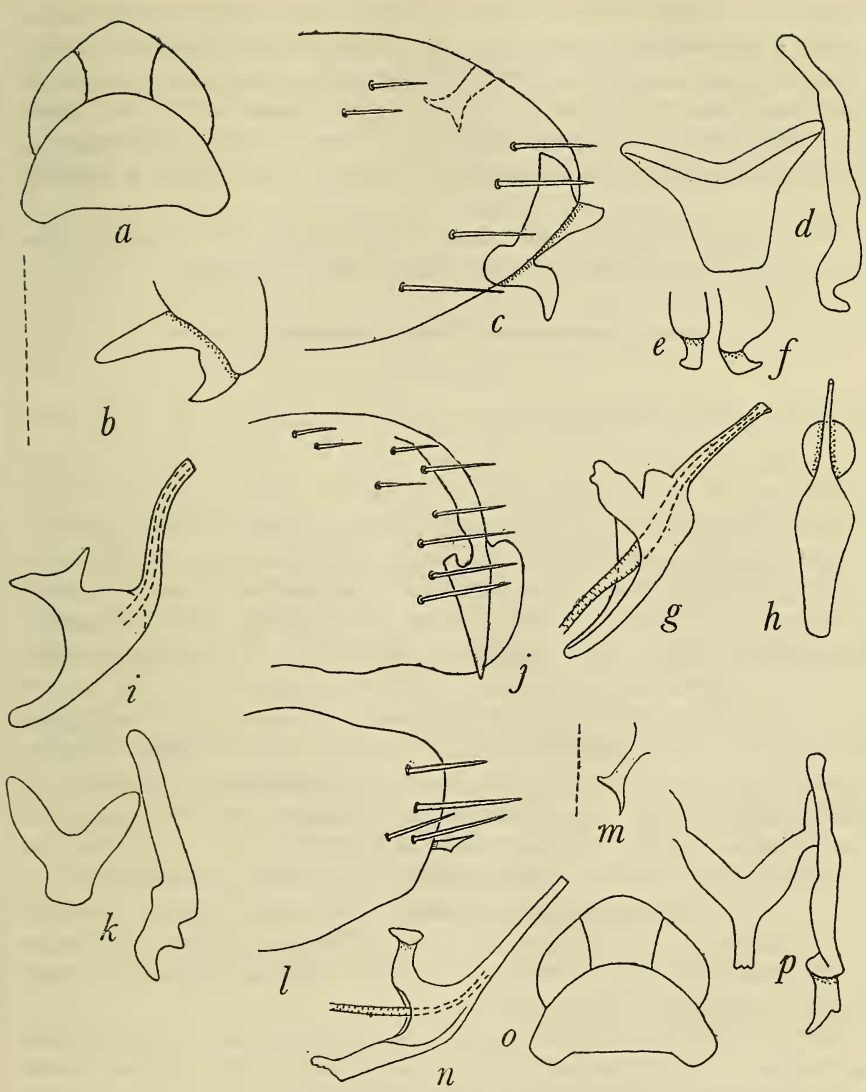

FIGURE 21.—*Omegalebra. a–h, O. vexillifera: a,* anterior dorsum; *b,* pygofer process, ventral aspect (broken line is midline of specimen); *c,* pygofer, lateral aspect; *d,* style and connective, ventral aspect; *e,* style apex, mesal aspect; *f,* same, caudal aspect; *g,* aedeagus, lateral aspect; *h,* aedeagus, ventral aspect. *i–k, O. lenticula: i,* aedeagus, lateral aspect; *j,* pygofer, lateral aspect; *k,* style and connective, dorsal aspect. *l–p, O. cordiae: l,* pygofer, lateral aspect; *m,* pygofer process, ventral aspect (broken line is midline of specimen); *n,* aedeagus, lateral aspect; *o* anterior dorsum; *p,* style and connective, dorsal aspect.

broader, to commissure in region of claval apex, thence caudolaterad along and outlining paler bases of second, third, and fourth apical cells to costal margin, thence gradually fading, extending parallel to and near apical wing margin, not attaining inner apical cell; inner apical cell weakly fumose in apical half. Ivory to pale yellow beneath, the pleural portion of the pronotum marked with orange to a variable degree.

This species is known only from Puerto Rico. The type is in the Herbert Osborn collection at the Ohio State University.

***Omegalebra cordiae* (Osborn), new combination**

FIGURE 21,*l–p*

Protalebra cordiae Osborn, Journ. Dep. Agr. Porto Rico, vol. 13, p. 102, 1929.

Length of male 2.8 mm.; of female 2.7–3.0 mm. Crown with apex more broadly rounded than in *O. vexillifera* (Baker); median length one-fourth greater than interocular width. Pronotum with median length slightly greater than median length of crown. Ocelli about midway between inner eye margins and median line. Female seventh sternum as long as exposed portion of ovipositor; posterior margin angular but with apex truncate; pygofer with all macrosetae pale. Male plates exceeding posterior pygofer margin, each with row of macrosetae in middle half. Male pygofer in lateral aspect with posterodorsal portion slightly produced; with a posterodorsal submarginal group of few macrosetae; pygofer process arising near middle of hind margin, extending caudad, short, obliquely truncate apically in lateral aspect, bifid with short rami in ventral aspect. Ninth tergite as in *vexillifera*. Anal processes absent. Style with distinct preapical lobe and boot-shaped apical extension. Connective large, Y-shaped, extending caudad more than half length of shank of style. Aedeagus with preatrium well developed; dorsal apodeme T-shaped; shaft slender, straight, without processes.

Crown entirely dull yellow or dull yellow with ivory spots at base and apex. Pronotum dull yellow or ivory with diffuse yellow discal spots, humeral margins faintly pink. Scutellum yellow or ivory with a very narrow anteapical transverse black band. Forewings with ground color translucent yellow to hyaline, the chief marking a large omega-shaped design involving both wings, crossing commissural margins in their basal thirds, extending laterad on each wing to costal margin near its midlength thence mesocaudad to apex of cell M, thence slightly laterad to apex of cell R, contrasting bright yellow or lacteus, the transverse portion of the design bordered anteriorly with contrasting black, the longitudinal portions similarly bordered laterally, mesally and apically; occasionally with faint additional longi-

tudinal dark markings in basal and apical portions of clavus; apical half of brachial cell usually with a faint longitudinal dark vitta; veins at bases of apical cells black-bordered; apical portions of second, third and fourth apical cells darkly fumose. Face and venter pale except dark spots at base of posttibial spines and dark apices of posttibiae. Pleural portion of pronotum occasionally faint pink. Sternal abdominal apodemes attaining second conjunctiva.

The type, from Aguirre, Puerto Rico, is in the Ohio State University collection. Other specimens have been examined from Ponce and Cayey, Puerto Rico, from Vieques Island, and from St. Thomas, Virgin Islands. The host plant was reported to be *Cordia alliodora* by Martorell (*in* Caldwell and Martorell, 1952, p. 93).

***Omegalebra blantoni*, new species**

FIGURE 22,*a–d*

Length of male 2.8–2.9 mm., of female 3.1 mm. Crown with apex broadly rounded; median length one-fourth greater than interocular width. Pronotum with median length approximately one-half greater than median length of crown; posterior margin shallowly, sinuately concave. Hind wing with submarginal vein not confluent with wing apex. Ocelli closer to eyes than to median line of head. Female seventh sternum as long as exposed portion of ovipositor, truncate apically; pygofer with a few macrosetae contrasting black. Male plates exceeding posterior pygofer margin, each with a row of macrosetae, some of which are conspicuous and black, on middle half. Male pygofer with posterior margin broadly rounded, disc with few irregularly arranged macrosetae near dorsal portion of posterior margin; pygofer process arising along ventral pygofer margin, curved abruptly mesad thence caudomesad at apex, apical portion gradually tapered and acute. Ninth tergite absent. Anal processes as in *O. vexillifera* (Baker). Style as in *O. lenticula* (Osborn). Connective thick, V-shaped, extending caudad to point opposite midlength of shank of style. Aedeagus with preatrium short; dorsal apodeme laterally compressed; shaft elongate, slender, with laterally compressed flange at apex. Sternal abdominal apodemes traversing one conjunctiva.

Ground color of crown, pronotum and scutellum ivory; crown with a transverse discal orange or gray marking extending from eye to eye, and a pair of gray spots anteriorly; pronotum with a Y- (type) or V-shaped dull orange marking on anterior half of disc, humeral margins narrowly red; scutellum as in *vexillifera*. Forewing with ground color dull yellow, markings as in *vexillifera*. Face, venter and pleural portion of pronotum as in *vexillifera* but with antennal bases orange.

Holotype male, Tocumen, Panamá Province, Panama, July 1, 1953 (F. S. Blanton), in U. S. National Museum (No. 62680), paratypes from Fort Clayton, Mojinga Swamp, and Mindi Dairy, Panama Canal Zone, and from El Retiro and Río Hato, Coclé Province, Panama.

O. blantoni is similar to *balloui*, new species, in the form of the pygofer and its processes and in the form of the style, and to *morrisoni*, new species, in the last feature and in the form of the aedeagal shaft. From *balloui*, *blantoni* may be separated by its laterally compressed aedeagal apex and distinct aedeagal apodeme; from *morrisoni* by the form of the pygofer processes (see illustrations) and the characters mentioned in the key.

This species is named for its collector, who collected the type series and whose extensive collections in Panama have provided material for a greater understanding of the Western Hemisphere leafhopper fauna.

***Omegalebra balloui*, new species**

FIGURE 22,*e–i*

Length of female 3.3 mm. Female with apex of crown rounded; median length approximately one-fifth greater than interocular width. Pronotum of female with median length one-half greater than median length of crown; posterior margin shallowly, sinuately concave. Ocelli as in *O. vexillifera* (Baker). Female seventh sternum as long as exposed portion of ovipositor, posterior margin strongly produced with an apical subquadrate lobe; pygofer without contrasting black macrosetae. Male plates gradually tapering, exceeding posterior pygofer margin, each with a row of macrosetae on middle half. Male pygofer with posterior margin broadly rounded, posterior portion of disc with few irregularly arranged macrosetae; pygofer process arising along ventral margin, its free portion extending caudomesad from middle of posterior pygofer margin, short, slender, acute apically. Ninth tergite not differentiated. Anal process weak, almost attaining middle of pygofer disc. Style short, with preapical lobe strong, very short apical extension. Connective thickly U-shaped, extending distad almost as far as style apices. Aedeagus with preatrium distinct; dorsal apodeme wanting; shaft elongate, slender, with pair of anteapical processes which are rolled ventrad. Sternal abdominal apodemes traversing one conjunctiva.

Color, based on females: Ground color of crown, pronotum and scutellum dull yellow, crown with a faint spot at apex and one on each side on anterior margin, pronotum with a submarginal spot at middle of anterior margin, a faint longitudinal vitta on each side of disc and a transverse submarginal area at middle of posterior margin, dull ivory. Scutellum yellowish white, the basal angles yellow, a black spot at midlength of each lateral margin. Forewings with ground

color yellowish hyaline, the omega-shaped marking lacteus, crossing commissure in basal half of clavus, not contiguous with apex of scutellum, the transverse portion bordered anteriorly with black, the longitudinal portion partially bordered with black on outer and inner margins; each wing with cross veins mostly pale, bordered with smoky, third apical vein covered by a black mark which extends mesad along apical wing margin to inner apical cell. Face and venter pale, antennal bases and pleural portion of pronotum yellow, a spot at apex of posttibia and at apex of first hind tarsomere, black.

Holotype female and female paratype, San Pedro de Montes de Oca, Costa Rica, January 1937 (C. H. Ballou), in U. S. National Museum (No. 62681). The illustrations have been made from a topotypic male specimen represented only by wings and abdomen, the remainder having been lost from the cardboard point.

The relationships of this species are discussed under *blantoni*, above.

***Omegalebra morrisoni*, new species**

FIGURE 22,*j–l*

Length of male 2.8 mm. Crown with apex sharply rounded; median length one-fourth greater than interocular width. Pronotum with median length one-third greater than median length of crown; posterior margin shallowly sinuately concave. Ocelli nearer to inner eye margins than to median line of crown. Male plates gradually tapered, exceeding posterior pygofer margin, each with row of macrosetae on middle half. Pygofer with posterior margin not produced, its posterodorsal portion shallowly emarginate; disc with sparse, irregularly arranged macrosetae on dorsal portion; pygofer process arising on posterior margin, short, stout extending mesad and ventrad, acute apically. Ninth tergite absent. Anal processes membranous. Style as in *O. blantoni* Young. Connective Y-shaped, unpaired portion broad. Aedeagus with preatrium distinct, dorsal apodeme T-shaped in cephalic aspect, apex expanded as in *blantoni* but not symmetrical as in that species.

Ground color of crown, pronotum and scutellum dull ivory; crown with a faint bilobed discal transverse orange vitta; pronotal markings as in *O. vexillifera* (Baker); scutellum with basal angles and an anteapical median marking pale yellow, a very narrow transverse anteapical stripe, black. Forewings with ground color gray, the apical two-thirds of claval suture and the omega-shaped marking hyaline, the latter crossing commissure in basal half of clavus, not contiguous to scutellum, its transverse portion narrowly bordered anteriorly with black with a pale orange more anterior border, bordered posteriorly with pale yellow, its longitudinal portions bordered with gray except for black border at costal margin of wing; cross veins, except black

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base of outer apical cell, pale, dark-margined, the wing apex black-margined from third apical cell to outer margin of apex of first apical cell; a fumose area near midlength of first and second apical cells.

Holotype male, "Duarte, Santo Domingo City, Republic of Dominica, July 21, 1917" (Harold W. Morrison), in U. S. National Museum (No. 62682).

The relationships of *morrisoni* are discussed above, under *blantoni*.

This species is dedicated to its collector, who has collected many leafhoppers in the Caribbean area and who has made major contributions to homopterous taxonomy.

***Omegalebra ogloblini*, new species**

FIGURE 22,*m–q*

Length of male 3.5 mm. Similar to *O. vexillifera* (Baker) in all gross features except anterior margin of crown which is more rounded in dorsal aspect. Male plates slightly exceeding posterior pygofer margin, each with row of macrosetae over middle half. Pygofer with posterodorsal portion produced posteriorly and emarginate at apex, with an oblique row of macrosetae on posterior portion of disc and two additional submarginal ones near base of dorsal margin; pygofer process arising at apex from an elongate horizontal integumental thickening over disc, extending caudomesad, short, slightly sinuate, gradually tapered. Ninth tergite absent. Anal processes strong, cultrate. Anterior margin of ninth tergum with a pair of conspicuous, anteriorly directed apodemes. Style with short, decurved apical extension. Connective V-shaped with a pair of small apical dorsal lobes. Aedeagus with preatrium short, dorsal apodeme trilobate; shaft inconspicuous, straight, simple-tubular, extending posterodorsad, with a pair of minute, lateral processes and with a single large ventral process which is gradually tapered and curved dorsad to the apex which is bifid, the branches approximate. Sternal abdominal apodemes traversing one conjunctiva.

Ground color of crown and pronotum ivory, each with a V-shaped discal marking, that of crown yellow, of pronotum, orange; pronotum with a pair of widely-spaced round spots on posterior half of disc, dull yellow, humeral margins pink. Scutellum with ground color dull ivory, basal angles dull orange, a median Y-shaped marking gray, a spot at midlength of each lateral margin, and apex, black. Forewings with ground color gray with a lacteus omega-shaped marking crossing commissure distinctly behind apex of scutellum, its lateral and apical portions as in *vexillifera*, the transverse portion bordered sharply with black anteriorly, with a narrow triundulate red border posteriorly; apical third of clavus pale grayish translucent; a dark gray undulate longitudinal marking on each wing forming an inner border to longi-

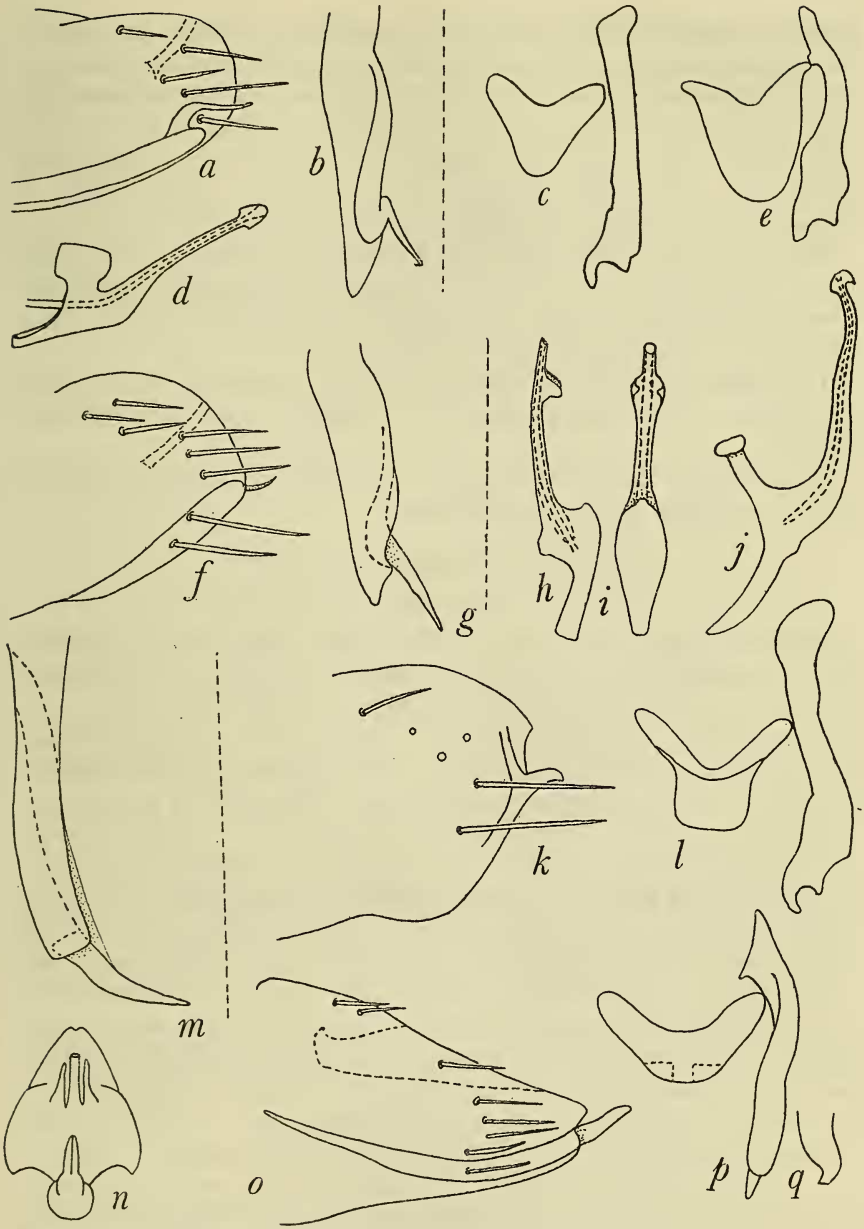

FIGURE 22.—*Omegalebra.* *a–d*, *O. blantoni* (type): *a*, pygofer, lateral aspect; *b*, pygofer process, ventral aspect; *c*, style and connective, dorsal aspect; *d*, aedeagus, lateral aspect. *e–i*, *O. balloui*: *e*, style and connective, dorsal aspect; *f*, pygofer, lateral aspect; *g*, pygofer process, ventral aspect; *h*, aedeagus, lateral aspect; *i*, aedeagus, ventral aspect. *j–l*, *O. morrisoni*: *j*, aedeagus, lateral aspect; *k*, pygofer, lateral aspect; *l*, style and connective, dorsal aspect. *m–q*, *O. ogloblini*: *m*, pygofer process, ventral aspect; *n*, aedeagus, caudal aspect; *o*, pygofer, lateral aspect; *p*, style and connective, dorsal aspect; *q*, style apex, lateral aspect. (In *b*, *g*, and *m* the broken line represents the midline of the specimen.)

tudinal portion of the omega-shaped marking, attaining commissure just behind claval apex, extending thence caudolaterad along bases of apical cells, filling apical portion of third apical cell, thence extending submarginally around wing apex and fading, ending in inner apical cell, a faint fumose marking in first and second apical cells near their midlengths. Face ivory, antennal bases orange; posterior part of pleural portion of pronotum pink; posttibiae as in *vexillifera*.

Holotype male, Loreto, Misiones Province, Argentina, Dec. 6, 1931, (A. A. Ogloblin), in U. S. National Museum (No. 62716); male paratype, Santa Catarina, Nova Teutonia, Brazil, Apr. 29, 1950 (F. Plaumann), in Snow Entomological Collections.

The bizarre form of the aedeagus and the presence of the dorsal apodemes on the anterior margin of the ninth tergum are distinctive features.

The species is named in honor of Mr. Ogloblin, who has collected many interesting species in Argentina.

***Omegalebra matogrossana*, new species**

FIGURE 23,*a–d*

Length of male 3.2–3.3 mm. Crown with apex broadly rounded; median length equal to interocular width. Pronotum with median length more than one-half greater than median length of crown; posterior margin shallowly concave. Ocelli closer to inner eye margins than to median line of crown. Male plates gradually tapered, exceeding posterior pygofer margin, each with a row of pale macrosetae on middle half. Pygofer with caudoventral margin strongly produced at midlength; disc with few irregularly arranged macrosetae; pygofer process arising ventrally, extending dorsocaudad, exceeding posterior pygofer margin, in lateral aspect slightly expanded on ventral margin near midlength, gradually tapered in apical half; pygofer wall with a diagonal, differentially sclerotized rod extending from anterodorsal portion of disc posteroventrad to pygofer process near its midlength. Ninth tergum with a basal transverse sclerotized rod and a pair of lateral membranous lines, roughly delimiting a tergite which is not delimited apically. Anal processes short, weak. Style elongate, with slight preapical lobe and unmodified apical extension. Connective as in *O. vexillifera* (Baker) but with unpaired portion narrower. Aedeagus with preatrium very short; dorsal apodeme short, T-shaped, shaft short, recurved. Sternal abdominal apodemes not traversing one conjunctiva.

Dorsum as in *vexillifera*, but with posterior portion of omega-shaped marking narrowly double-margined medially, singly margined with black and with veins forming apical cells margined with black. Face, venter and pleural portion of pronotum as in *vexillifera*.

Holotype male and 12 male paratypes, Rio Caraguata, Brazil, March 1953 (F. Plaumann), in Snow Entomological Collections and five male paratypes, same data, in U. S. National Museum. In addi-

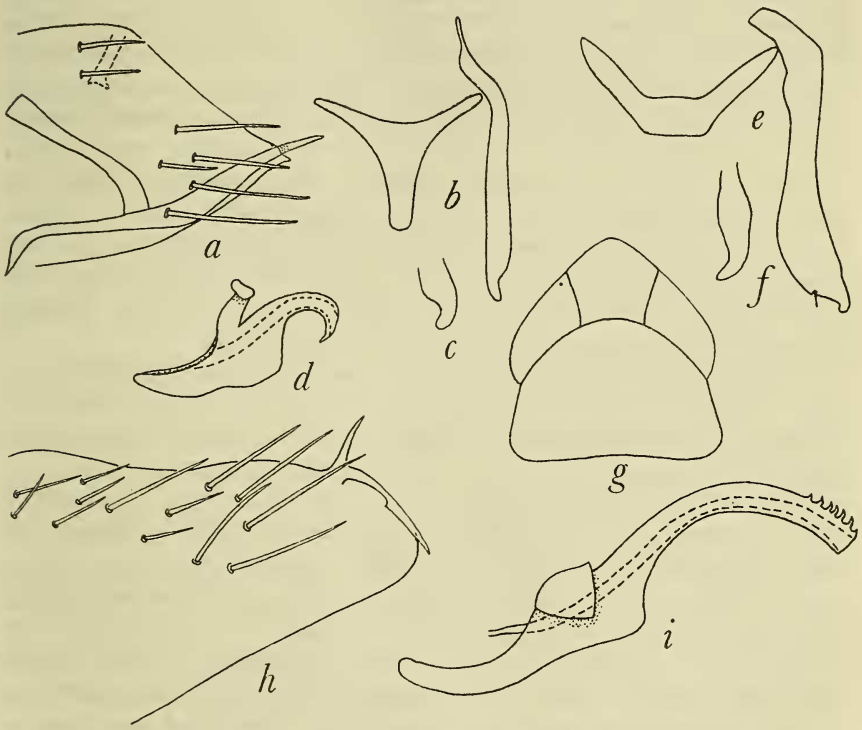

FIGURE 23.—*Omegalebra*. *a–d*, *O. matogrossana*: *a*, pygofer, lateral aspect (broken line represents anal process); *b*, style and connective, dorsal aspect; *c*, style apex, lateral aspect; *d*, aedeagus, lateral aspect. *e–i*, *O. barbata*: *e*, style, lateral aspect and connective; *f*, style, ventral aspect; *g*, anterior dorsum; *h*, pygofer, lateral aspect; *i*, aedeagus, lateral aspect.

tion to the type series, a teneral male from São Paulo, Brãzil, was examined from the U. S. National Museum.

***Omegalebra barbata*, new species**

FIGURE 23,*e–i*

Length of male 3.8–3.9 mm., of female 4.0 mm. Crown with apex obtusely rounded; median length slightly greater than interocular width. Pronotum with median length more than one-half greater than median length of crown; posterior margin varying from rectilinear to very shallowly concave. Ocelli as in *O. vexillifera* (Baker). Female seventh sternum with posterior margin greatly attenuate and truncate apically, more than three times length of exposed portion of ovipositor; pygofer

with a few of the macrosetae contrasting black. Male plates each slightly flared apically, exceeding posterior pygofer margin, with row of pale macrosetae from near base to apex. Male pygofer greatly produced posteriorly, posterior margin rounded; dorsal portion of disc with numerous irregularly arranged macrosetae; pygofer process arising on posterodorsal pygofer margin, biramous, the ventral ramus more elongate and directed ventrad. Ninth tergum consisting of a narrow, heavily sclerotized ring dorsally. Anal processes absent. Style with preapical lobe present but not pronounced; apex curved ventrad. Connective broadly V-shaped, not extending caudad to apex of basal half of shank of style. Aedeagus with preatrium elongate; dorsal apodeme a narrow collar dorsally, expanded lateroventrad into an auriculiform process on each side; shaft crescentiform, the dorsal margin with several short, retrorse anteapical teeth. Sternal abdominal apodemes not traversing one conjunctiva.

Ground color of crown, pronotum, and scutellum bright ivory, a pair of dots, and a more posterior pair of dashes on disc of crown, a Y-shaped discal marking and a submarginal row of dots near anterior and lateral margins of pronotum, and basal angles of scutellum yellowish gray; humeral margins of pronotum pink; apex of scutellum black. Forewings with omega-shaped marking as in *vexillifera* but with the transverse portion much more angular, its black anterior and red posterior borders consisting of oblique lines on each wing; humeral portions of wing gray, the triangular area enclosed by the arms of the "omega" tan, and extending caudolaterad along contrastingly paler bases of apical cells, completely filling the triangular third apical cell; outer apical cell and an adjoining submarginal area, lacteus. Face, venter and posttibiae as in *vexillifera*. Apex of female seventh sternum black.

Holotype male, allotype female, and male paratype, Santa Catarina, Nova Teutonia, Brazil, May 4, 1950 (F. Plaumann), in Snow Entomological Collections; paratype male, same data, in U. S. National Museum. A specimen from Campinas, Brazil, in the Pomona College collection has also been examined.

Erabla, new genus

FIGURE 24

Type of the genus, *Protalebra lineola* Osborn.

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire, ending in costal margin before apex; vein Cu_2 confluent with submarginal vein at point much basad of vein m-cu. Forewing with appendix not extending around wing apex which is smoothly rounded; inner apical cell much broader in basal third than in remainder of length; second apical cell with length

measured along inner margin more than two-thirds length of inner apical cell measured along the common margin; second and third apical cells triangular and petiolate; outer apical cell not attaining apical wing margin, with length exceeding width. Cells R and M about equal in length and anteapical width. Male plates triangular, in length exceeding posterior pygofer margin, each with a multiseriate group of pale macrosetae in basal half. Pygofer with apical processes and a vertical row of anteapical macrosetae. Ninth tergum heavily

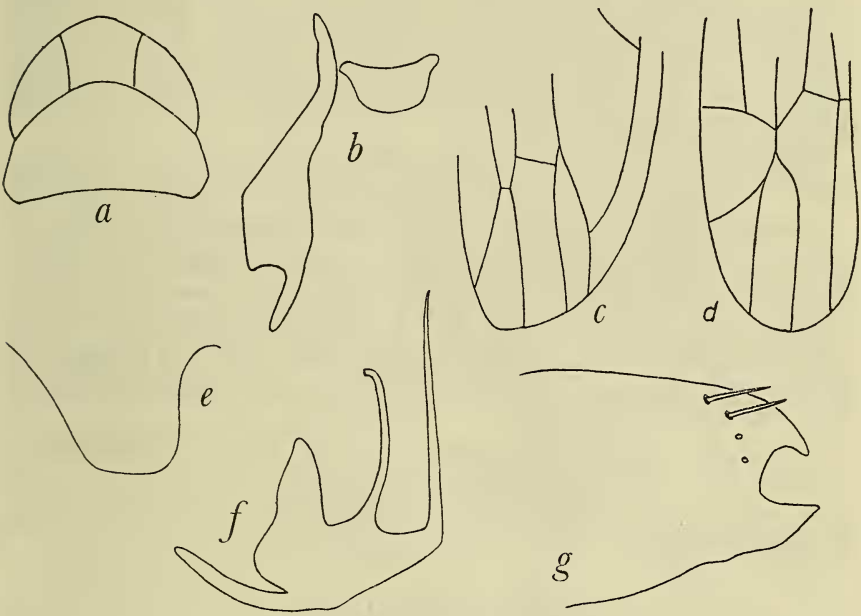

FIGURE 24.—*Erabla lineola* (paratype): *a*, anterior dorsum; *b*, style and connective, dorsal aspect; *c*, apex of hind wing; *d*, apex of forewing; *e*, right sternal abdominal apodeme, ventral aspect; *f*, aedeagus, lateral aspect; *g*, pygofer, lateral aspect.

sclerotized along median line but without a distinct tergite. Anal processes absent. Style with distinct preapical lobe. Connective transverse. Aedeagus with distinct preatrium, dorsal apodeme and ventral unpaired process. Sternal abdominal apodemes short, not traversing one conjunctiva. Head slightly produced and rounded anteriorly with median length of crown about equal to interocular width; ocelli on rounded margin between crown and face, equidistant from eyes and median line of head. Pronotum wider than head including eyes; lateral margins divergent posteriorly. Face slightly convex in lateral aspect, strongly divergent from contour of crown.

Distribution: Guatemala.

Erabla lineola (Osborn), new combination

FIGURE 24

Protalebra lineola Osborn, Ann. Carnegie Mus., vol. 18, p. 263, 1928.

Length of male 2.9 mm. Crown with median length subequal to interocular width. Pronotum with median length almost twice median length of crown. Male pygofer with posterior margin produced and with a deep, curved emargination; with few macrosetae in vertical row on upper half of pygofer. Connective in a transverse vertical plane. Aedeagus with preatrium broad and flat; dorsal apodeme laterally compressed; shaft slender, tubular, elongate, the apex curved slightly cephalad, with an aciculate, unpaired basal process extending caudad near its origin, sharply curved through 90° and extending dorsad beyond apex of shaft.

Crown, pronotum and scutellum dull yellowish brown, the basal angles and median line of scutellum darker. Forewing yellowish translucent before apical cells, with a transverse marking, narrow at midcostal margin, becoming broader towards commissural margin, with three slender oblique vittae extending basad from its anterior margins, one in clavus, two in corium, black; apical cells fumose with hyaline areoles in outer, and base of inner apical cells, and a transverse hyaline anteapical area from third apical cell through appendix. Face and venter dull yellow.

Known only from the type series from Los Amates, Guatemala, in the Ohio State University collection. The above description is based on a male paratype loaned through the kindness of Dr. J. N. Knull of that institution.

Genus *Rabela* Young

FIGURE 25

Rabela Young, Univ. Kansas Sci. Bull. 35, p. 21, 1952 (type *Protalebra tabebuiae* Dozier, by original designation).

Hind wing with submarginal vein obsolete apically; posterior branch of vein R occurring as a short spur; vein Cu_2 confluent with submarginal vein at point much proximad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; veins R and M concurrent before inner basal angle of outer apical cell, all the apical veins thus arising from cell M; inner apical cell narrower basally than at apex; second apical cell parallel-sided; third apical cell long-stalked; outer apical cell longer than broad, not attaining apical wing margin. Female seventh sternum with posterior margin produced posteriorly in a triangular projection which is rounded apically; pygofer with multiseriate pale macrosetae near ovipositor along

posterior two-thirds its length. Male plates elongate triangular, exceeding posterior pygofer margin, each with an oblique double row of pale macrosetae in basal two-thirds. Male pygofer with posterior margin produced posteriorly, with an apical pygofer process, with one or few macrosetae along posterodorsal margin. Ninth tergum heavily sclerotized along middorsal line but without a tergite. Anal processes short and spine-like or absent. Style with preapical lobe well developed or not, apex expanded and truncate in broadest aspect. Connective Y-shaped, with apex slender or very broad. Aedeagus with preatrium distinct; dorsal apodeme bilobed or not; elongate, slender, curved strongly cephalad, without processes. Head with median length of crown exceeding interocular width; ocelli on margin between crown and face, closer to eyes than to median line of head. Pronotum at least one-half longer than crown; broader than head including eyes; lateral margins divergent posteriorly. Face slightly convex, its profile strongly divergent from contour of crown.

Distribution: Florida, West Indies, and South America.

This genus does not appear to be very closely related to the others treated here. The chaetotaxy of the male pygofer and the presence of the preapical lobe of the style are suggestive of a relationship to *Rhabdotalebra* Young, but in *Rabela* the characteristic nearly semicircular form of the aedeagal shaft and the expanded apical portion of the style are quite distinctive.

Key to species of *Rabela*

Forewing with commissure fuscous in basal half of clavus; male with sternal apodemes conspicuous and traversing two conjunctivae; aedeagus with dorsal apodeme bilobed . . . . . **tabebuiae,** (Dozier)

Forewing with commissure not dark-margined in basal half of clavus; male with sternal apodemes inconspicuous and traversing one conjunctiva; aedeagus with a single process extending caudad from dorsal portion of apodeme. **australis,** new species

Rabela tabebuiae (Dozier)

FIGURE 25,*a–g*

Protalebra tabebuiae Dozier, Journ. Dep. Agr. Porto Rico, vol. 10, p. 260, 1927.
Protalebra bicincta Osborn, Ann. Carnegie Mus., vol. 18, p. 259, 1928.
Rabela tabebuiae; Young, Univ. Kansas Sci. Bull. 35, p. 22, 1952.

Length of male 2.7–2.8 mm., of female 2.9–3.0 mm. Head very weakly produced, with anterior margin broadly rounded; median length about one-third greater than interocular width. Male pygofer with a submarginal row of four macrosetae near posterodorsal margin, with posteroventral margin produced posteriorly in a short process that is directed dorsocaudad, the two processes parallel in caudal aspect. Anal processes absent. Style with preapical lobe well

developed, with apical extension somewhat expanded and truncate at apex in broadest aspect. Connective with length and least width of the unpaired portion and arms subequal. Aedeagus with cephalic portion of dorsal apodeme giving off a pair of short lobes, each extending ventrolaterad; shaft very long, slender, curved through 180°, its apex directed anteroventrad. Sternal abdominal apodemes conspicuous, fused medially, extending caudad across two abdominal conjunctivae.

Ground color of crown and pronotum ivory, a median longitudinal vitta extending full length of crown and continued over most of pronotum and a pair of broad submarginal vittae, one along each lateral pronotal margin, pale orange. Scutellum unmarked yellow. Forewing translucent, with yellow reflections in portion from base to claval apex, a narrow dark line extending along anal wing margin, continuing apicad along commissural margin to midlength of clavus, thence abruptly laterad to costal margin, broken at claval suture and in corium, a similar transverse black line extending from apex of clavus to costal margin through base of outer apical cell; second and third apical cells heavily black-bordered. Face and venter pale.

The type, a male from Río Piedras, Puerto Rico, is in the U. S. National Museum. Other specimens have been examined from Miami, Fla.; several Puerto Rico localities; St. Thomas, Virgin Islands; and Cayamas, Cuba.

This species occurs on *Tabebuia pallida*.

Rabela australis, new species

FIGURE 25,*h–l*

Length of male 3.0 mm., of female 3.1 mm. Head more angularly produced than in *R. tabebuiae* (Dozier), the apex rounded; median length almost one-third greater than interocular width. Male pygofer with a single macroseta near posterodorsal margin in apical third, with posterior margin strongly produced near midlength, giving off spine-like pygofer process that is directed caudad and slightly mesad, the two processes very slightly convergent in ventral aspect. Anal processes short, spine-like. Style with preapical lobe poorly developed, apex curved laterad, expanded and truncate apically. Connective with unpaired portion much broader than either of the short arms. Aedeagus with dorsal apodeme laterally compressed, with a dorsoventrally flattened apical lobe extending caudad, shaft crescentiform, shorter than in *tabebuiae*, not decurved apically, gonopore on posterior surface in basal third. Sternal abdominal apodemes short, triangular, not fused, extending caudad to point slightly beyond one conjunctiva.

Ground color of crown, pronotum and scutellum dull orange;

crown with disc and a pair of anterior lobes dull ivory; pronotum bordered narrowly with gray posteriorly, with an interrupted arcuate black stripe between gray margin and disc; scutellum with basal angles and a broad median longitudinal marking, smoky, a transverse

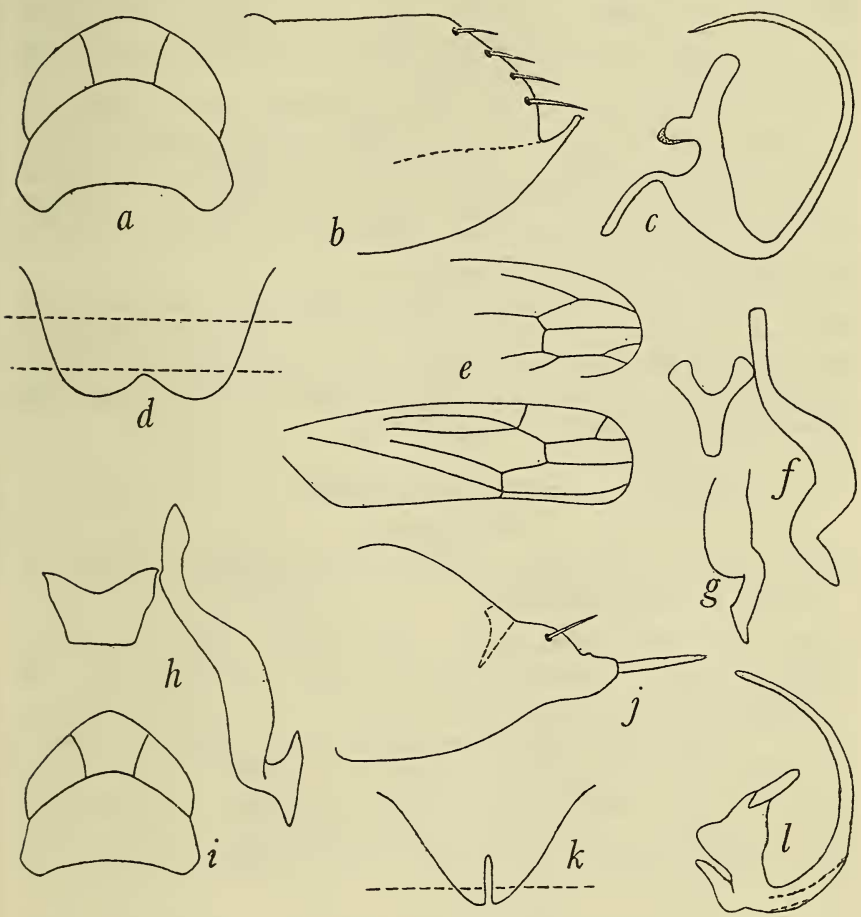

FIGURE 25.—*Rabela*. *a–g*, *R. tabebuiae: a*, anterior dorsum (type); *b*, pygofer, lateral aspect; *c*, aedeagus, lateral aspect; *d*, sternal abdominal apodemes (broken lines represent conjunctivae); *e*, apex of hind wing (above) and entire forewing (below); *f*, style and connective, ventral aspect; *g*, style apex, ventrolateral aspect. *h–l*, *R. australis: h*, style and connective, dorsal aspect (type); *i*, anterior dorsum (paratype); *j*, pygofer, lateral aspect (broken line represents anal process) (type); *k*, sternal abdominal apodemes (broken line represents conjunctiva); *l*, aedeagus, lateral aspect (type).

anteapical area black, apex ivory. Forewing with ground color greenish brown to claval apex, thence hyaline to wing apex, a bilobate transverse area in basal half of clavus, a spot at claval midlength,

extending laterad through corium and broadening to include costal plaque, gray narrowly margined with black; costal cell with black irrorations anteapically; apex of brachial cell with a yellow areole; second, third and fourth apical veins black; a broad fumose marking covering all of appendix but apex, and all of first and second apical cells but their bases and apices. Face and venter pale; pleural portion of pronotum dull orange to gray; ovipositor black at base and apex, pale in most of apical half.

Holotype male, May 4, 1950; allotype female, May 5, 1950; two male paratypes, May 4, 5, 1950, and three female paratypes, May 5, 1950, from Santa Catarina, Nova Teutonia, Brazil (F. Plaumann), in Snow Entomological Collections, and one male paratype, May 5, 1950, and two female paratypes, May 4, 5, 1950 (other data as in holotype), in U. S. National Museum.

This species can be readily distinguished from *tabebuiae* by its color and the characters mentioned in the key. Its shorter aedeagal shaft which is not decurved apically, the much broader style apices and the absence of paired apodemal processes on the aedeagus will also separate *australis* from the genotype.

Genus *Elabra* Young

FIGURES 26, 27

Elabra Young, Univ. Kansas Sci. Bull. 35, p. 35, 1952 (type *Protolebra eburneola* Osborn, by original designation).

Hind wing with submarginal vein confluent with apical wing margin or nearly so; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein at point much basad of crossvein m-cu. Forewing with appendix not extending around apex which is usually smoothly rounded; inner apical cell narrower at base than at apex (exception: *costaricensis*); second apical cell usually parallel-sided or nearly so, with length less than two-thirds length of inner apical cell; third apical cell as long as or longer than second apical cell

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FIGURE 26.—*Elabra*. *a–c*, *E. eburneola*: *a*, pygofer, lateral aspect (pygofer process and anal process not shown); *b*, style and connective, dorsal aspect; *c*, aedeagus, lateral aspect. *d–h*, *E. parana*: *d*, anterior dorsum; *e*, aedeagus, lateral aspect; *f*, apex of forewing; *g*, style and connective, dorsal aspect; *h*, pygofer, lateral aspect. *i–m*, *E. parallela*: *i*, anterior dorsum; *j*, style and connective, dorsal aspect; *k*, style apex, lateral aspect; *l*, aedeagus, lateral aspect; *m*, pygofer, lateral aspect. *n–q*, *E. morrisoni* (type): *n*, pygofer, lateral aspect; *o*, style and connective, dorsal aspect; *p*, sternal abdominal apodemes (broken lines represent conjunctivae); *q*, aedeagus, lateral aspect. *r–s*, *E. morrisoni isthmusi* (type): *r*, style and connective, dorsal aspect; *s*, aedeagus, lateral aspect. (In *h*. *m*. and *n* the broken lines represent the anal process.)

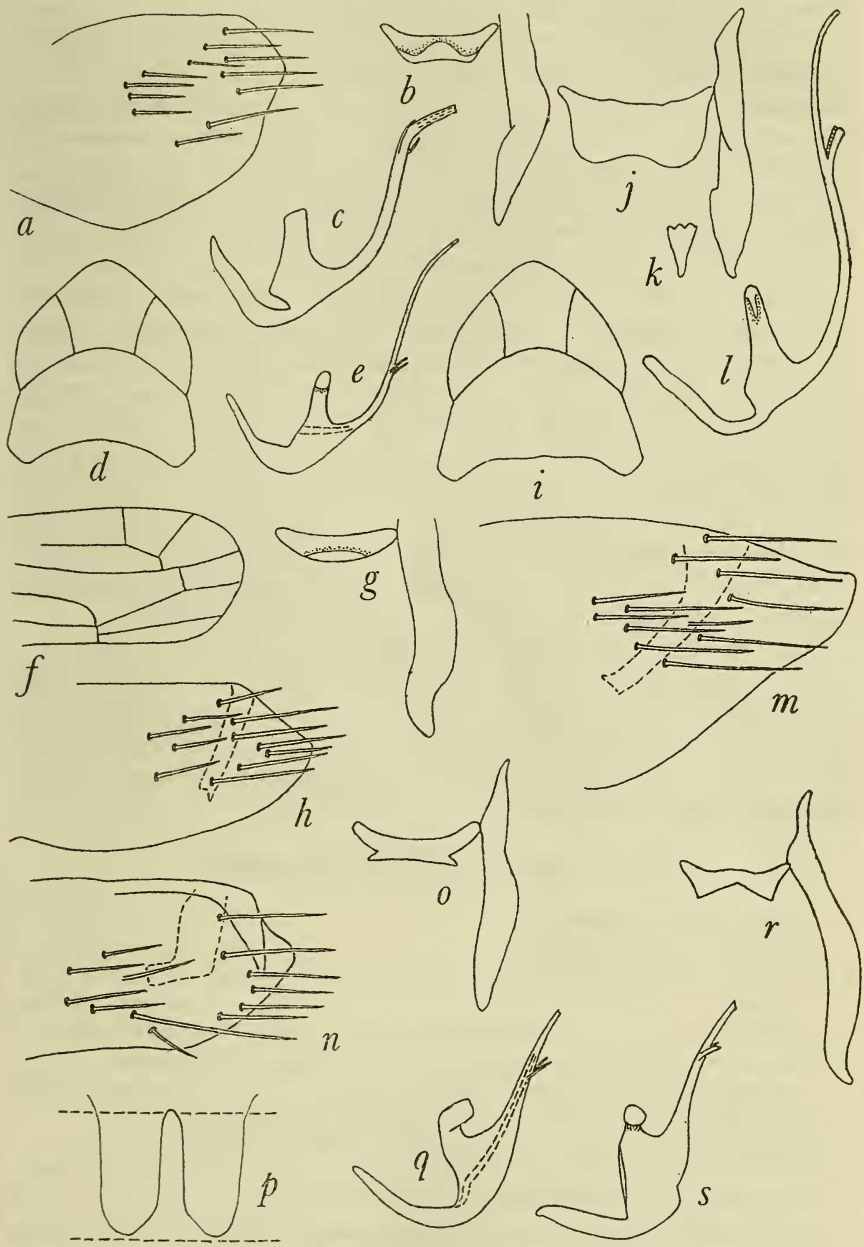

Figure 26.—For explanation see facing page.

(exception: *parallela*); outer apical cell with length equal to or greater than width; cell M wider apically than cell R. Male plates triangular, exceeding posterior pygofer margin, each with an oblique row of macrosetae some of which are conspicuously larger and black (exception: *eburneola*). Pygofer with posterior margin produced or smoothly rounded; with irregularly arranged macrosetae on disc, processes present or absent. Ninth tergite wanting. Anal processes usually present (absent in *sarana*), their length variable interspecifically. Style usually without preapical lobe, with apex slightly decurved. Connective usually in form of crossbar but occasionally shallowly U-shaped or triangular. Aedeagus with preatrium usually present and elongate; dorsal apodeme distinct and bilobed; shaft very slender (exception: *sarana*), with or without processes. Head strongly produced, median length of crown at least one-half greater than interocular width; ocelli on rounded margin between crown and face, equidistant from inner eye margins and median line of head or slightly closer to inner eye margins. Pronotum wider than head including eyes, lateral margins divergent posteriorly. Face strongly divergent from contour of crown in profile. Sternal abdominal apodemes variable interspecifically. Color pale with various markings.

Distribution: Puerto Rico, Central America, and South America.

The relationships of this genus with others are problematical. The elongate, sinuous aedeagus in some species is suggestive of certain species of *Barela*, but the more produced head, the short apical cells of the forewing and the transverse dorsal aedeagal apodeme set the species of *Elabra* well apart.

Key to species and subspecies of *Elabra*

1. Aedeagus with processes 2
   Aedeagus without processes 7
2. Aedeagal process occurring on basal half of shaft; length of male 3.0 mm. (Brazil) . . . . . **parana** (Osborn)
   Aedeagal processes arising on apical half of shaft; length of male 3.2–3.6 mm. 3
3. Male pygofer with processes arising on posterior margin and extending ventrad; aedeagus without preatrium (Bolivia). . . . . **sarana** (Osborn)
   Male pygofer without processes; aedeagus with preatrium elongate 4
4. Aedeagal processes arising on apical third of shaft (Bolivia). **eburneola** (Osborn)
   Aedeagal processes arising basad of apical third of shaft 5
5. Aedeagal shaft slender, elongate, bisinuate; length of male 3.6 mm.; forewing with third apical cell triangular (Bolivia, Brazil, Ecuador). **parallela** (Osborn)
   Aedeagal shaft much shorter, straight; length of male 3.2 mm.; forewing with third apical cell sessile . . . . . **morrisoni,** new species . . 6

6. Male with anal process strongly foot-shaped apically; dorsal portion of pygofer differentially sclerotized (British Guiana). . . . **morrisoni,** new subspecies
   Male with anal process weakly foot-shaped apically; dorsal portion of pygofer not differentially sclerotized (Panama) . . . . **isthmusi,** new subspecies
7. Aedeagal shaft gradually tapered from base to apex; dorsum marked with fumose only in base of second apical cell of forewing (Puerto Rico). **aureovittata** (DeLong)
   Aedeagal shaft abruptly narrowed in basal half; fumose markings on dorsum more extensive (Costa Rica) . . . . . **costaricensis,** new species

Elabra eburneola (Osborn)

FIGURE 26,*a–c*

Protalebra eburneola Osborn, Ann. Carnegie Mus. vol. 18, p. 257, 1928.
Elabra eburneola; Young, Univ. Kansas Sci. Bull. 35, p. 35, 1952.

Length of male 3 mm. Forewing with second apical cell less than half length of first. Male plates without contrasting black macrosetae. Pygofer with posterior margin broadly rounded, disc with fairly numerous irregularly arranged macrosetae on dorsal portion of posterior half; pygofer process short, acute apically in caudal aspect, arising from dorsal portion of caudal margin, directed mesad. Anal processes slender, short, weakly sclerotized. Aedeagus with preatrium elongate; dorsal apodeme semicircular in cephalic aspect; shaft slender and elongate, weakly bisinuate, with a pair of short, obliquely divergent acute processes arising at base of apical fifth; gonopore terminal.

Color: "Ivory-white; elytra tinged with fulvous, a little darker on the apex, with milky-hyaline spots on the cross-nervure and in first and second areoles. Beneath whitish or ivory-white; abdomen a little more tinged with yellow, tarsal claws dusky." (Osborn, loc. cit.)

Known only from the type series from Provincia del Sara, Bolivia, in Carnegie Museum.

Elabra parallela (Osborn)

FIGURE 26,*i–m*

Dikraneura parallela Osborn, Ann. Carnegie Mus., vol. 18, p. 274, 1928.
Elabra parallela; Young, Univ. Kansas Sci. Bull. 35, p. 35, 1952.

Length of male 3.6 mm. Forewing with second apical cell less than half length of first. Male plates with a few of the macrosetae large, contrasting black. Pygofer with posterodorsal margin strongly produced, setae as in *E. eburneola* (Osborn); without pygofer processes or differentially sclerotized integumental areas. Anal processes strong, extending ventrad beyond middle of disc of pygofer. Aedeagus with preatrium elongate; dorsal apodeme transverse with a decurved lobe on each side; shaft as in *eburneola* but with the processes arising

slightly distad of midlength and truncate apically. Sternal abdominal apodemes vestigial.

Ground color of crown, pronotum and scutellum sordid yellow, a median vitta the length of crown, a pair of longitudinal vittae the full length of pronotum traversing disc, outlines of basal angles of scutellum, the lateral margins anteapically and the scutellar apex, orange. Forewing translucent yellow, a longitudinal commissural vitta occupying inner half of clavus in its basal half, entire clavus in apical half except extreme apex, an oblique vitta beginning at base of costa and extending to middle corium at midlength of latter, a vitta bordering inner margin of cell M apically, a spot including base of outer apical cell, and the apical veins, orange; a spot in apex of brachial cell, a spot in base of second apical cell and an oblique costal vitta opposite claval apex, smoky. Face and venter pale yellow; legs pale yellow beneath, suffused with orange above, apical hind tarsomere black.

The type, a male from Provincia del Sara, Bolivia, is in the Carnegie Museum. Males have been examined from Rio Caraguata, Brazil, and Tena, Ecuador. Apparently the apex of the shaft of the aedeagus of the type is missing.

From *eburneola*, to which it is closely related, *parallela* differs in the location of the aedeagal processes which are closer to midlength of shaft, the more produced posterior pygofer margin of the male, the more strongly produced head, and the presence of conspicuous black setae in the row of macrosetae on the male plate. From *parana*, *parallela* differs in its truncate aedeagal processes and their more distal origin on the shaft.

Elabra parana (Osborn)

FIGURE 26,*d–h*

Dikraneura parana Osborn, Ann. Carnegie Mus., vol. 18, p. 268, 1928.
Elabra parana; Young, Univ. Kansas Sci. Bull. 35, p. 35, 1952.

Length of male 3.0, of female 3.3 mm. Forewing with second apical cell less than half length of first. Female seventh sternum with hind margin slightly produced posteriorly at middle, transverse and slightly convex on both sides of the produced portion; pygofer with a conspicuous group of black macrosetae behind midlength. Male plates with some of the macrosetae larger and conspiculously black. Male pygofer with posterior margin produced at midlength, disc with numerous irregularly arranged macrosetae on apical half; no pygofer processes or differentially sclerotized integumental areas. Anal processes extending ventrad beyond middle of disc of pygofer. Aedeagus with preatrium elongate; dorsal apodeme T-shaped, the vertical portion short; shaft as in *E. eburneola* (Osborn) but with

processes arising before midlength, appressed to shaft in ventral aspect. Sternal abdominal apodemes traversing one conjunctiva.

Crown, pronotum and scutellum ivory, a pair of longitudinal vittae over disc of pronotum and extending over basal angles of scutellum, pale yellow. Forewing milky translucent with a faint yellow area along claval commissural margin, and a similarly suffused area in brachial cell. Face and venter pale.

Known only from the holotype and allotype, from Para, Brazil, in the Carnegie Museum collection.

Although closely related to *eburneola* and *parallela*, *E. parana* can be distinguished readily from these by the position of the processes of the aedeagal shaft.

***Elabra morrisoni*, new species**

FIGURE 26,*n–s*

Length of male 3.2 mm., of female 3.3 mm. Forewing with second apical cell less than half length of first. Female seventh sternum with posterior margin transverse; pygofer with numerous pale macrosetae and a pair of black setae on each side of ovipositor near its midlength. Male plates with several contrasting black macrosetae. Male pygofer with numerous irregularly arranged macrosetae. Anal processes strong, boot-shaped, extending ventrad to middle of disc of pygofer. Aedeagus with preatrium elongate; dorsal apodeme T-shaped, the vertical portion very short; shaft straight, short compared to foregoing species of *Elabra*, with a pair of acute processes near base of apical half.

E. morrisoni can be readily distinguished from the preceding species of *Elabra* by its shorter, straighter aedeagal shaft.

***Elabra morrisoni morrisoni*, new subspecies**

FIGURE 26,*n–q*

Male pygofer wall with differentially sclerotized bar extending along dorsal pygofer margin and ventrad near posterior pygofer margin, ending opposite lobe of posterior margin; macrosetae occurring generally over disc except near dorsal margin. Anal process foot-shaped with the "toe" large. Sternal abdominal apodemes attaining second conjunctiva.

Dorsum entirely pale yellowish white, the forewings more deeply tinted with yellow. Venter white, the hind tibiae darker at apices and apical hind tarsomere black.

Holotype male and allotype female, Demerara River bank, 2 miles from Georgetown, British Guiana, Sept. 22, 1918 (H. Morrison), in

U. S. National Museum (No. 62683). Specimens have also been examined from Caroni River, Trinidad.

***Elabra morrisoni isthmusi*, new subspecies**

FIGURES 26,*r,s*; 27,*a*

Male pygofer with dorsal margin not differentially sclerotized; macrosetae occurring on dorsal portion of posterior half of disc. Anal process similar to that of typical subspecies, but with toe of foot-shaped portion less pronounced.

Ground color of crown, pronotum and scutellum ivory; disc of crown suffused with dull yellow; pronotum with pair of longitudinal yellow vittae, diverging posteriorly and continuous posteriorly with yellow basal angles of scutellum. Forewing yellowish transparent; apical cells fumose, the second apical cell with a darker spot in basal half. Venter and legs as in typical subspecies.

Holotype male, Peña Blanca, Panamá Province, Panama, Oct. 27, 1952 (No. 62684); male paratype, El Retiro, Coclé Province, Panama, Nov. 10, 1952; and a paratype of each sex, Río Hato, Coclé Province, Panama, Jan. 15, 1952; all collected by F. S. Blanton and in U. S. National Museum.

***Elabra sarana* (Osborn)**

FIGURE 27,*b–g*

Dikraneura sarana Osborn, Ann. Carnegie Mus. vol. 18, p. 268, 1928.
Elabra sarana; Young, Univ. Kansas Sci. Bull. 35, p. 35, 1952.

Length of male, 3.2 mm. Forewing with second apical cell more than half length of first. Male plates without contrasting black setae. Pygofer with posterior margin rounded, disc with setae arranged as in *E. eburneola* (Osborn); pygofer process arising along caudal margin, extending anteroventrad. Anal processes absent. Aedeagus with preatrium absent; dorsal apodeme T-shaped, the vertical portion very short; shaft tapered gradually in lateral aspect, constricted near midlength in caudoventral aspect, with a pair of flat, truncate anteapical processes that are divergent from shaft in lateral aspect. Sternal abdominal apodemes absent.

Crown dull orange except sordid white anterior margin. Pronotum and scutellum ivory, with a pair of longitudinal vittae extending over pronotum to hind margin; basal angles of scutellum brown. Forewing milky translucent, a narrow longitudinal claval commissural vitta in basal two-thirds of clavus and an oblique vitta extending from near base of wing through brachial cell longitudinally, and continued through second apical cell almost to apical wing margin, orange. Face and venter pale.

This species is known only from the type, a male, from Provincia del Sara, Bolivia, in the Carnegie Museum.

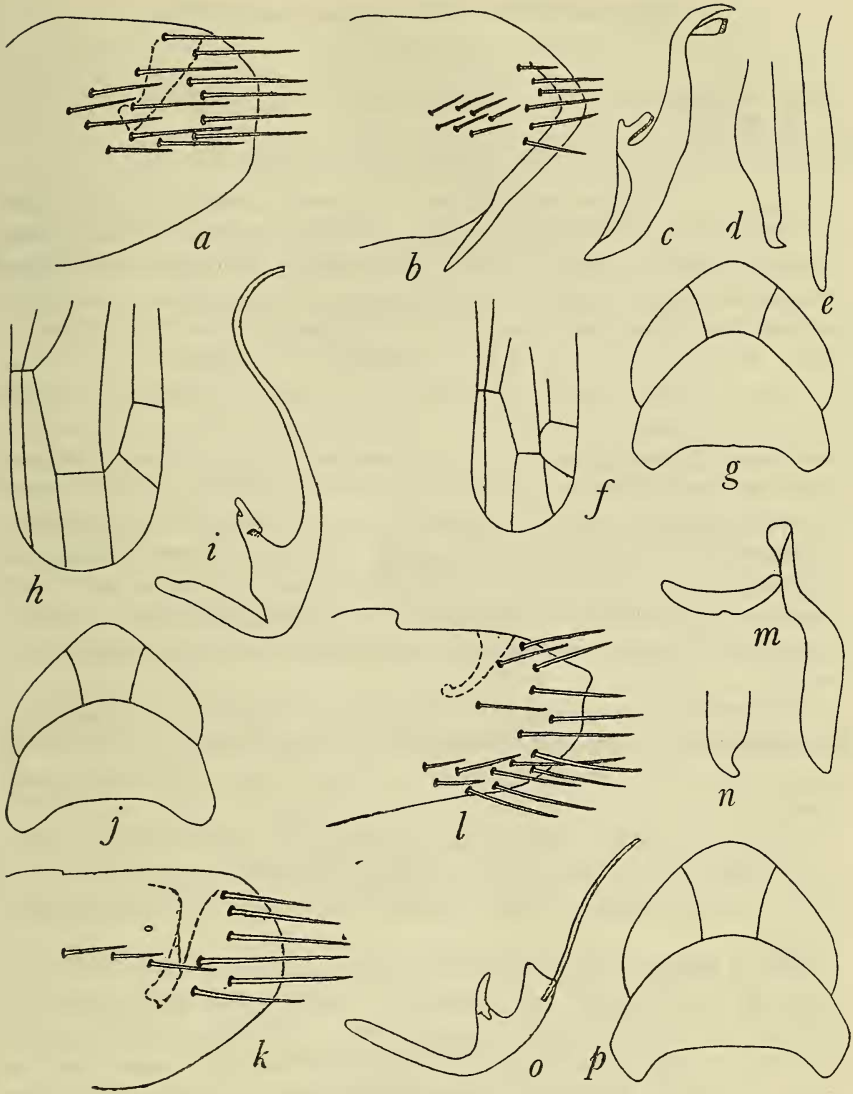

FIGURE 27.—*Elabra.* *a*, *E. morrisoni isthmusi*, pygofer, lateral aspect. *b–g*, *E. sarana* (type): *b*, pygofer, lateral aspect; *c*, aedeagus, lateral aspect; *d*, apical portion of style, lateral aspect; *e*, same, dorsal aspect; *f*, apical portion of forewing; *g*, anterior dorsum. *h–k*, *E. aureovittata: h*, apical portion of forewing; *i*, aedeagus, lateral aspect; *j*, anterior dorsum; *k*, pygofer, lateral aspect. *l–p*, *E. costaricensis: l*, pygofer, lateral aspect; *m*, style and connective, dorsal aspect; *n*, style apex, lateral aspect; *o*, aedeagus, lateral aspect; *p*, anterior dorsum (type). (In *a*, *k*, and *l* the broken lines represent the anal process.)

***Elabra aureovittata* (DeLong), new combination**

FIGURE 27,*h–k*

Alebra aureovittatus DeLong, *in* Wolcott, Journ. Dep. Agr. Porto Rico, vol. 7, p. 267, 1923.
Protalebra pallida Osborn, Ann. Carnegie Mus., vol. 18, p. 260, 1928.

Length of both sexes 3.3 mm. Forewing with second apical cell less than half length of first. Female seventh sternum with posterior margin weakly trilobate, the median lobe more pronounced than lateral ones; pygofer with numerous pale macrosetae and with a pair of black macrosetae each side of ovipositor near its midlength. Male plates with some of the macrosetae contrasting black, conspicuous. Male pygofer with posterior margin rounded, disc with irregularly arranged macrosetae extending from near middle of disc caudad, the group broadening near posterior margin; without pygofer processes or differentially sclerotized integumental areas. Anal processes distinct, extending ventrad beyond middle of disc of pygofer. Aedeagus with preatrium elongate; dorsal apodeme transverse, T-shaped, the vertical portion very short, the extremities each with a vertical lobe; shaft slender, elongate, tapering, bisinuous, without processes. Sternal abdominal apodemes not attaining second conjunctiva.

Dorsum pale yellow to yellowish green, forewing with basal part of commissural margin and brachial cell slightly deeper green; second apical cell with a dusky spot in its base. Face and venter pale, unmarked.

A cotype of *Alebra aureovittatus* DeLong, from the DeLong collection, bearing the label "Acc. 221–1922, Ciales, P. R., Aug. 22, 1922, G. N. Wolcott, collector," and the label "holotype," is here designated lectotype.

Osborn (Journ. Dep. Agr. Porto Rico, vol. 13, p. 105, 1929) and Caldwell (*in* Caldwell and Martorell, 1952, p. 90) are followed in placing the Osborn name in synonymy. The types of *Protalebra pallida* have not been examined. Martorell (loc. cit.) states that the species occurs in association with *Cordia sulcata*. Known only from Puerto Rico.

E. aureovittata differs from the preceding species of *Elabra* in its lack of aedeagal processes.

***Elabra costaricensis*, new species**

FIGURE 27,*l–p*

Length of male 3.8–3.9 mm., of female 3.9–4.0 mm. Forewing with length of second apical cell half or less than half length of first which is of about same width at apex as at base. Female seventh sternum

short, posterior margin transverse; pygofer with numerous pale setae on posterior half and a group of four contrasting black macrosetae near ovipositor slightly distad of its midlength. Male plates with a few of the macrosetae large, contrasting black. Male pygofer with posterodorsal margin produced in a slight lobe, posterior margin truncate or slightly concave, disc with numerous irregularly arranged macrosetae on posterior half; without pygofer processes or differentially sclerotized integumental areas. Anal processes extending to middle of pygofer disc. Aedeagus with preatrium elongate; dorsal apodeme a transverse bar; shaft broad basally, abruptly narrowed at basal third its length, the apical two-thirds slender and weakly sinuate, without processes. Sternal abdominal apodemes traversing one conjunctiva.

Crown yellowish brown except a dull ivory area next anteromesal margin of each eye, the brown color deepening posteriorly and continued and broadening over disc of pronotum, where it is weakly amber-margined laterally, and including the whole scutellum; lateral margins of pronotum broadly ivory. Forewing transparent, suffused with yellow in costa, brachial cell, and before bases of apical cells, a spot at base of commissural margin, a larger, poorly defined one at midclavus, a costal area in basal half of costal cell and an oblique vitta in its apical half, base of inner apical cell and of adjacent appendix, and wing apex weakly fumose; a spot in base of second apical cell black. Face and venter pale, apex of hind tibiae and apical hind tarsomere, black.

Holotype male, allotype female, seven male and seven female paratypes, San Pedro de Montes de Oca, Costa Rica, Aug. 14, 1936 (C. H. Ballou), collected from *Vernonia brachiata*, *Tabebuia pentaphylla*, and "*Cornutia cymosa*," in U. S. National Museum (No. 62685).

The abruptly narrowed aedeagal shaft of *costaricensis* is unlike all other species of the genus.

Genus *Rhabdotalebra* Young

FIGURES 28–30

Rhabdotalebra Young, Univ. Kansas Sci. Bull. 35, p. 36, 1952 (type *Protalebra octolineata* Baker, by original designation.

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R evanescent apically; vein Cu_2 confluent with submarginal vein at point much basad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell broader in basal third than in apical half; second apical cell slender, triangular or not, usually narrower at base than at apex; third apical cell stalked, outer apical cell with width exceeding

half length, not attaining apical wing margin, its base distinctly proximad of base of third apical cell. Male plates elongate, triangular, exceeding posterior pygofer margin, with macrosetae confined to basal half. Pygofer with uniseriate, usually oblique group of few submarginal macrosetae along posterodorsal or posterior margin; pygofer process present (exception: *plummeri*), but occasionally not differentially sclerotized, usually directed mesad. Style with preapical lobe present, occasionally weak. Connective transverse, in form of crossbar or shallowly U-shaped. No ninth tergite or anal processes. Aedeagus with preatrium distinct; dorsal apodeme well developed, saddle-shaped in lateral aspect, usually bilobed at base; shaft smoothly curved dorsad, with or without terminal processes; gonopore variously located. Head usually produced, apex rounded; in profile with contour of crown rounded to line of face which is regularly convex; ocelli present, indistinct in some species, on margin between crown and face. Pronotum much longer than crown, wider than head, including eyes; lateral margins divergent posteriorly.

In a recent paper, cited above, the writer stated that ocelli were absent in this genus, an observation since found to be erroneous. In some species the ocelli are difficult to see, but they have now been observed in all the species.

One group of species, consisting of *octolineata, signata, jamaicensis* and *monrosi,* has a color pattern involving slender longitudinal or oblique black lines on the anterior half of the forewing. Except the last named, all of these lack processes on the aedeagal shaft. *R. monrosi* and the remainder of the species have retrorse shaft processes, and *hambletoni, plummeri, brunnea* and *ornata* are characterized by a transverse transcommissural color pattern on the forewings.

In addition to the species treated below, *Protalebra lineatella* Osborn (Ann. Carnegie Mus., vol. 18, p. 257, 1928) is placed here provisionally (*new combination*) on the basis of an examination of the female type, from Santa Lucia, Guatemala, in the Ohio State University collection. The color pattern of the type is similar to that of *signata.* Topotypic males are needed to characterize this species.

Key to species and subspecies of *Rhabdotalebra*

1. Chief color markings of anterior two-thirds of forewings consisting of longitudinal or oblique narrow black vittae which are not transcommissural. . . 2
   Chief color markings of anterior two-thirds of forewings transcommissural, not consisting of longitudinal or oblique narrow black vittae 5
2. Forewings each with single black U-shaped marking; pronotum with longitudinal orange vittae; aedeagus with shaft narrowed abruptly in apical half. . 3
   Forewings each with a double black U-shaped marking; pronotum without longitudinal orange vittae; aedeagus with shaft gradually tapered. 4

3. Male with pygofer process bifid apically; aedeagal shaft with narrowed portion not more than three times as long as wide . . . . . **monrosi,** new species
   Male with pygofer process not bifid; aedeagal shaft with narrowed portion more than three times as long as wide . . . . . **signata** (McAtee)
4. Male pygofer process bifurcate apically in lateral aspect, not decurved. **jamaicensis,** new species
   Male pygofer process not bifurcate apically, slightly decurved. **octolineata** (Baker)
5. Chief color marking of dorsum an hourglass-shaped white commissural marking; male without pygofer processes . . **plummeri** (Ruppel and DeLong)
   Chief color markings of dorsum otherwise; male pygofer with processes (occasionally not differentially sclerotized) 6
6. Chief color markings of dorsum an inverted "T" extending over pronotum, scutellum and basal half of forewings . . . . . **hambletoni,** new species
   Chief color markings of dorsum otherwise 7
7. Chief transcommissural markings of dorsum not attaining costal margins of wings; male with apical processes of aedeagus retrorse . . **ornata,** new species
   Posterior marking crossing commissure near midclavus, attaining wing margins at costal plaque of each wing; apical aedeagal process extending laterad, not appressed to shaft . . . . . **brunnea** (Oman) . . 8
8. Forewings with ground color tan; anterior transcommissural marking extending without interruption to costal plaque of each wing; sternal abdominal apodemes traversing three conjunctivae . . . subspecies **brunnea** (Oman)
   Forewings with ground color deep red; anterior transcommissural marking ending slightly laterad of claval suture on each wing; sternal abdominal apodemes traversing two conjunctivae . . . . . **colorata,** new subspecies

Rhabdotalebra octolineata (Baker)

FIGURE 28,*a–d*

Protalebra octolineata Baker, Invertebrata Pacifica, vol. 1, p. 7, 1903.
Rhabdotalebra octolineata; Young, Univ. Kansas Sci. Bull. 35, p. 36, 1952.

Length of male 2.7–2.8 mm., of female 2.9–3.0 mm. Crown with apex broadly rounded; median length almost equal to interocular width; posterior margin regularly shallowly concave. Pronotum with median length almost twice median length of crown. Ocelli weak, occasionally observed only with great difficulty, closer to median line of head than to inner margin of eyes. Female seventh sternum short, the posterior margin regularly shallowly concave; pygofer with multiseriate pale macrosetae on posterior two-thirds, the group conspicuously narrowed at its midlength. Male plates gradually tapered from base to apex, greatly exceeding posterior pygofer margin, each with a transverse group of pale macrosetae near base and one or a few macrosetae more distad in basal half. Male pygofer short, subtriangular in lateral aspect, with a submarginal row of few macrosetae near posterodorsal margin; pygofer process arising on posteroventral margin, tapered, acute apically, curved dorsocaudad in lateral aspect, the two processes convergent but not contiguous in ventral aspect. Style with conspicuous pre-

apical lobe and slightly curved apical extension. Connective a transverse bar. Aedeagus with dorsal apodeme bilobed at base; shaft slender, gradually tapering without processes, gonopore terminal on anterior face of shaft. Sternal abdominal apodemes not attaining first conjunctiva.

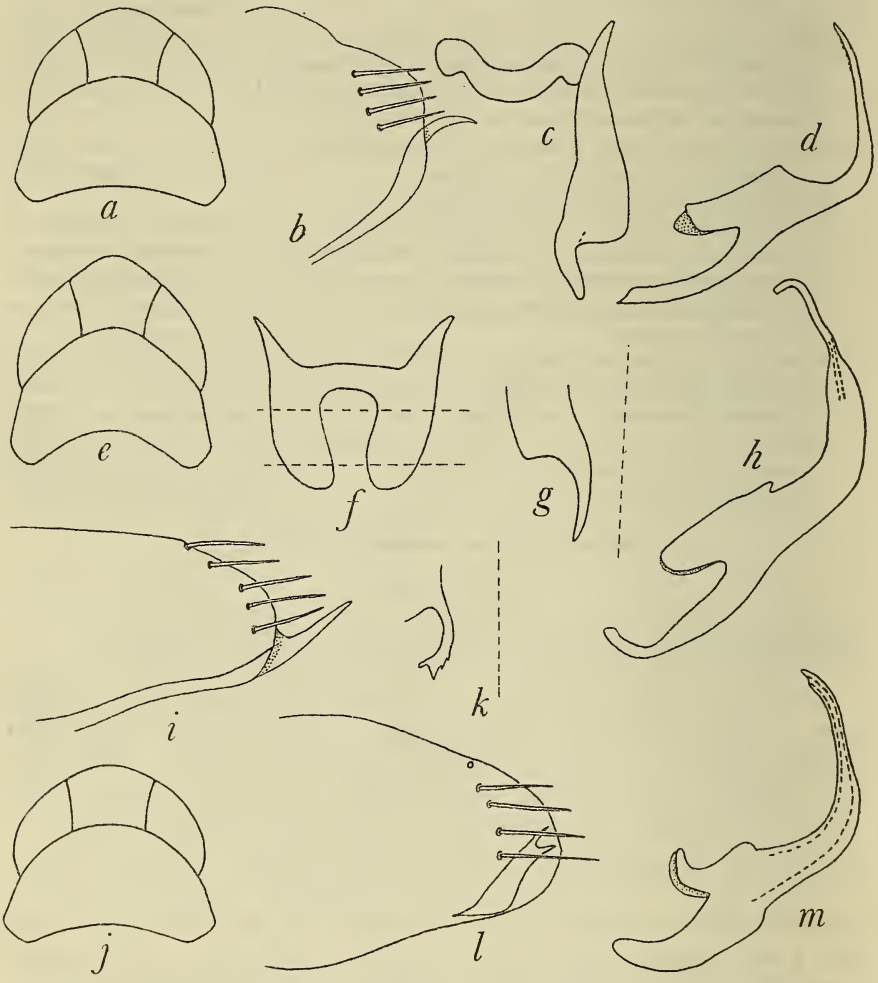

FIGURE 28.—*Rhabdotalebra*. *a–d*, *R. octolineata* (lectotype): *a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, style and connective, dorsal aspect; *d*, aedeagus, lateral aspect. *e–i*, *R. signata: e*, anterior dorsum (type); *f*, sternal abdominal apodemes (broken lines represent conjunctivae); *g*, pygofer process, caudoventral aspect; *h*, aedeagus, lateral aspect; *i*, pygofer, lateral aspect. *j–m*, *R. jamaicensis: j*, anterior dorsum (type); *k*, pygofer process, caudal aspect (paratype); *l*, pygofer, lateral aspect (type); *m*, aedeagus, lateral aspect (paratype). (In *g* and *k* the midline of the specimen is represented by a broken line.)

Ground color of crown, pronotum and scutellum dull yellowish green, frequently with a median longitudinal dark stripe on scutellum, occasionally continuous with a similar pronotal stripe that is less commonly present. Forewings greenish hyaline, each with an elongate U-shaped marking of darker green bordered internally and externally with black on basal two-thirds of wing; an obtuse triangular yellow marking traversing commissure at claval apex; inner apical cell of each wing with a black spot touching outer margin in basal third, and a similar spot on vein between third and fourth apical cells. Face and venter pale greenish yellow; posttibial spines uniformly pale; apex of tibiae, apical hind tarsomere, and a median posterior spot on female seventh sternum gray to black.

A male cotype, selected from approximately 95 cotypes in the Pomona College collection, from San Marcos, Nicaragua (collected by Baker), is here designated lectotype. Additional male specimens have been examined from Granada, B. W. I.; Coban, Guatemala (on *Lantana camara*); Middlesex, British Honduras (on *Lantana camara*); New Amsterdam, British Guiana, and Río Tabasara, Chiriquí Province, Panama.

Rhabdotalebra signata (McAtee)

FIGURE 28,*e–i*

Protalebra octolineata var. *signata* McAtee, Journ. New York Ent. Soc., vol. 34, p. 148, 1926.

Rhabdotalebra signata; Young, Univ. Kansas Sci. Bull. 35, p. 36, 1952.

Length of male 2.6–2.7 mm., of female 2.8–3.0 mm. Crown more produced than in *R. octolineata* (Baker), apex broadly rounded; median length more than half greater than interocular width; posterior margin regularly concave. Pronotum with median length less than one-half greater than median length of crown. Ocelli about equidistant from inner eye margins and median line of head. Female seventh sternum with posterior margin slightly convex; pygofer with transverse group of close-set pale macrosetae at mid-length, and few more sparsely arranged macrosetae near apex; male plates each with a transverse group of pale macrosetae near base. Pygofer more produced than in *octolineata*, with apical margin smoothly rounded; pygofer setae and process similar to *octolineata* but with apical free portion of latter almost straight in lateral aspect, not or very slightly curved; in caudoventral aspect the two processes subparallel. Other genital characters as in *octolineata* but with aedeagal shaft abruptly narrowed in apical third and with extreme apex curved cephalad, gonopore terminal. Sternal abdominal apodemes traversing two abdominal conjunctivae.

Ground color of crown, pronotum and scutellum pale yellow, a pair of longitudinal vittae extending caudad from near anterior margin of crown, bordering inner margin of each eye, extending caudolaterad across disc of pronotum to its hind border, orange, the vittae occasionally obsolete on crown; a narrow median longitudinal black stripe on pronotum and scutellum; basal and apical angles of scutellum deep yellow. Forewing hyaline tinged with transparent yellow; a thin, narrowly U-shaped mark involving both clavus and corium in basal three-fifths of wing; commissural line narrowly, a diagonal vitta near apex of cell R, a transverse vitta in base of outer apical cell, and a blotch over vein bordering third and fourth apical cells, black, the blotch extended mesad over basal portions of first and second apical cells as a fumose area, an arcuate marking subtending outer portion of wing apex and a pair of transcommissural arcs at level of claval apex enclosing a narrow transverse lenticular hyaline area, fumose. Face and venter yellow, a pink stripe over pleura and pleural portion of pronotum on each side; ovipositor black.

The holotype, from Ancón, Panama Canal Zone, has the abdomen missing. It is in the U. S. National Museum. Additional male specimens have been examined from Costa Rica (on *Tabebuia pentaphylla* (L.)), from Panama Canal Zone, from Darién, Panamá, and Los Santos Provinces, Panama; and from El Valle, Venezuela.

This species is related to *R. monrosi*, new species (q. v.), below.

Rhabdotalebra jamaicensis, new species

FIGURE 28,*j–m*

Length of male 2.7–2.8 mm., of female 2.8–3.0 mm. Crown with apex broadly rounded; median length equal to interocular width; posterior margin regularly shallowly concave. Pronotum with median length more than half greater than median length of crown. Ocelli as in *R. octolineata* (Baker). Female seventh sternum, pygofer and male plates as in *octolineata*. Male pygofer more produced than in *octolineata*, but with similarly arranged macrosetae, posterior margin smoothly convex; pygofer process short, arising on ventral pygofer margin near apex, extending dorsomesad, bifurcate apically, each process with few anteapical teeth on inner margin in caudal aspect. Style, connective and aedeagus as in *octolineata*, but shaft of aedeagus slightly broader in lateral aspect. Sternal abdominal apodemes as in *octolineata*.

Color as in *octolineata*, but slightly more suffused with yellow throughout and with pronotal median dark stripe always present.

Holotype male, allotype female, four female paratypes and two male paratypes, Kingston, Jamaica, Sept. 9, 1917 (Harold Morrison), in U. S. National Museum (No. 62686).

This species is very closely related to *octolineata*, from which it differs conspicuously in its short bifurcate pygofer process.

***Rhabdotalebra monrosi*, new species**

FIGURE 29,*a–e*

Length of male 3.0 mm. Crown with median length about equal to interocular width; posterior margin regularly concave. Pronotum with median length more than one-half longer than median length of crown. Ocelli on broadly rounded margin between crown and face, about equidistant from inner eye margins and median line of head. Male plates as in *R. octolineata* (Baker). Pygofer with posterior margin weakly produced slightly below midlength; pygofer process arising from ventral pygofer margin, directed mesad thence dorsad, distinctly bifid at apex, the two processes subparallel in caudoventral aspect. Style with preapical lobe well-developed. Connective somewhat U-shaped. Aedeagus with shaft laterally compressed, in lateral aspect very broad to short cylindrical apex which is directed dorsocaudad and bears two pairs of short anteapical teeth, gonopore terminal. Sternal abdominal apodemes as in *R. signata* (McAtee).

Crown uniform pale yellow. Pronotum yellowish white with a pair of posteriorly diverging longitudinal orange vittae from anterior to posterior margin. Scutellum pale orange, the apex dark. Forewings as in *signata*, but with transcommissural lenticular area at claval apex wider. Face and venter pale, an orange stripe over pleura and pleural portion of pronotum on each side.

Holotype male, Ledesma, Jujuy, Argentina, Feb. 10, 1950 (Willink and Monrós), in collection of Miguel Lillo Foundation, Tucumán, Argentina.

From *signata*, which it resembles in color pattern and the abruptly narrowed aedeagal shaft, *monrosi* differs in its laterally compressed aedeagal shaft, bifurcate pygofer processes, two pairs of very short processes on the aedeagal shaft, and, in color pattern, in the wider transcommissural lenticular black-margined area at the claval apex.

***Rhabdotalebra plummeri* (Ruppel and DeLong), new combination**

FIGURE 29,*f–j*

Protalebra plummeri Ruppel and DeLong, Ohio Journ. Sci., vol. 53, p. 226, 1953.

Length of male 2.6 mm. Crown well produced, apex rounded; median length more than twice interocular width; posterior margin angularly concave. Pronotum with median length subequal to median length of crown. Ocelli closer to inner eye margins than to median line of head. Female seventh sternum with posterior margin transverse with a very short rounded median lobe; setae as in *R.*

octolineata (Baker). Male plates gradually tapered from base to apex, greatly exceeding posterior pygofer margin, each with a quadrate group of macrosetae in basal half. Male pygofer with posterodorsal

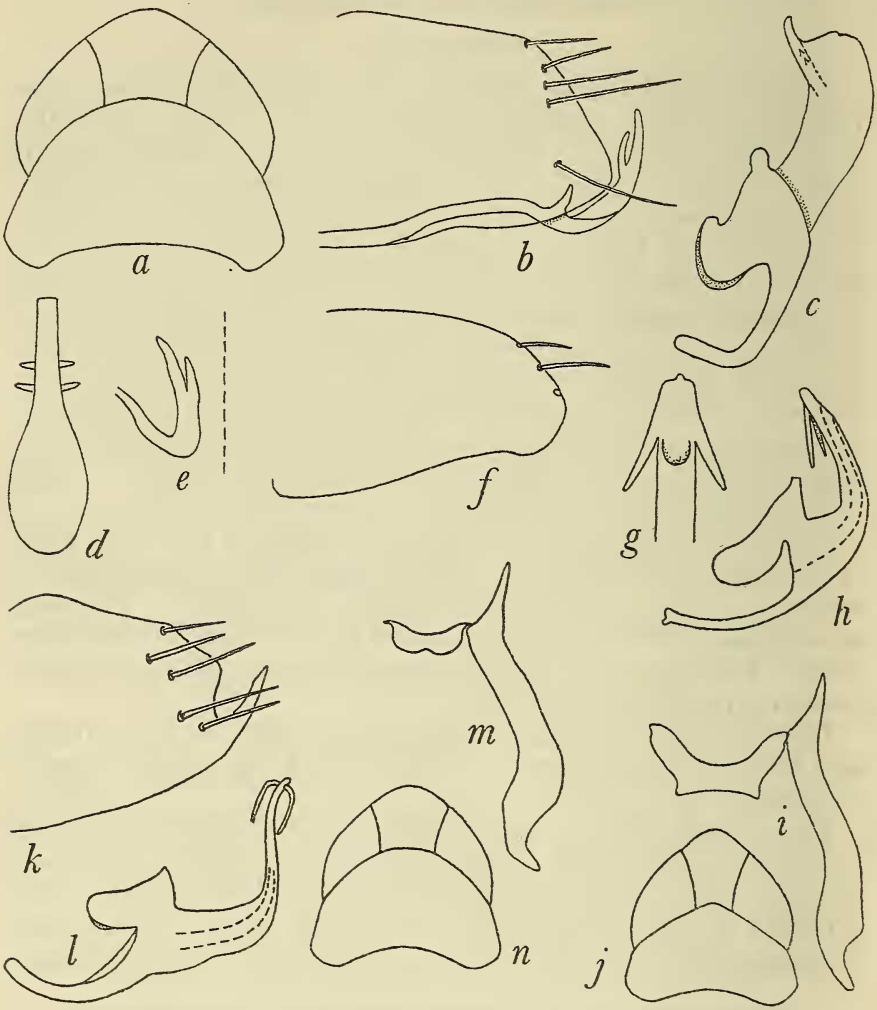

FIGURE 29.—*Rhabdotalebra*. *a–e*, *R. monrosi* (type): *a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, aedeagus, lateral aspect; *d*, aedeagus, caudal aspect; *e*, pygofer process, caudal aspect (broken line represents midline of specimen). *f–j*, *R. plummeri*: *f*, pygofer, lateral aspect; *g*, apex of aedeagus, caudal aspect; *h*, aedeagus, lateral aspect; *i*, style and connective, dorsal aspect; *j*, anterior dorsum. *k–n*, *R. hambletoni* (type): *k*, pygofer, lateral aspect; *l*, aedeagus, lateral aspect; *m*, style and connective, ventral aspect; *n*, anterior dorsum.

margin broadly convex; ventral margin enlarged apically, forming slight ventral pygofer lobe; pygofer processes absent. Style as in *octolineata*. Connective broadly U-shaped. Aedeagus with dorsal

apodeme laterally compressed, not bilobed at base; shaft slender, with pair of anteapical retrorse processes which are not appressed to shaft; gonopore anteapical on caudal surface.

Crown dull yellow with faint paler yellow transverse marking in apical half. Pronotum and scutellum orange, the former with trilobate gray marginal area along posterior margin, with black markings on each side of each lobe; scutellum with anteapical transverse black stripe, apex white. Forewings with basal portions of clavus and corium concolorous with scutellum, the orange area undulate and margined with black posteriorly, the dark margin extending diagonally and undulate posteromesad on each wing to claval suture in basal portion of apical half, recrossing claval suture, thence curved posteromesad to claval apex, outlining a transcommissural, hourglass-shaped, cream-colored area; costal plaque and adjoining corium pale translucent, the translucent area extending into clavus; a confluent marking in anteapical portions of cells R and M, with reversed C-shaped extension into brachial cell, an extension forming a loop in cell R, and an extension to costal margin behind costal plaque, apical veins broadly, except apical portions of first and second apical veins, smoky. Face and venter pale yellow except an orange spot below each eye, confluent with orange propleura, and a longitudinal smoky vitta across meso- and metapleura.

The holotype female, from Mexico, in the DeLong collection, has been examined through the kindness of Dr. DeLong. A single male from Caracas, Venezuela, is in the U. S. National Museum.

***Rhabdotalebra hambletoni*, new species**

FIGURE 29,*k–n*

Length of both sexes 2.9–3.0 mm. Crown with apex broadly rounded; median length one-fourth greater than interocular width; posterior margin regularly concave. Pronotum with median length about one-half greater than median length of crown. Ocelli closer to inner margins of eyes than to median line of head. Female seventh sternum, pygofer and male plates as in *R. octolineata* (Baker). Male pygofer with a submarginal group of macrosetae along posterodorsal pygofer margin; pygofer process arising at apex of posteroventral margin, tapered, acute apically, extending dorsocaudad, the two processes subparallel in ventral aspect. Style broadest before apex but without definite preapical lobe; apical portion short, curved slightly caudoventrad. Aedeagus with dorsal apodeme laterally compressed, weakly bilobed anteroventrally at base; shaft slender, curved dorsad, with pair of slender recurved lateral subapical processes, gonopore terminal on caudal face of shaft.

Crown sordid yellow (holotype) to brown, unmarked. Pronotum and scutellum black, with dark markings of basal half of forewing forming a conspicuous inverted black "T", the transverse portion of which is narrowed towards the costal margins and involves the middle half of the claval commissure; pronotum with lateral margins narrowly pale, and with an indistinct median submarginal pale spot along anterior margin. Ground color of forewings yellowish translucent; apical cells cloudy except hyaline spot in base of inner and outer apical cells and anteapical transverse hyaline area extending from anterior to posterior wing margin and through appendix. Face and venter pale except apex of hind tibiae and of ovipositor which are black.

Holotype male, allotype female, one male paratype and three female paratypes, São Paulo, Brazil (E. J. Hambleton), in U. S. National Museum (No. 62687).

***Rhabdotalebra ornata*, new species**

FIGURE 30,*a–f*

Length of male 2.8–2.9 mm., of female 3.0–3.1 mm. Head with apex sharply rounded, median length almost one-half greater than interocular width; posterior margin regularly shallowly concave. Pronotum with median length one-half greater than median length of crown. Ocelli about midway between inner eye margins and median line of crown in male; closer to eye margins in female. Female seventh sternum short, the hind margin transverse or shallowly concave on each side of a median, slightly produced, strap-like process; pygofer with setae on posterior half, arranged as in *R. octolineata* (Baker). Male plates abruptly narrowed near midlength, slightly exceeding posterior pygofer margin, each with a quadrangular group of macrosetae in basal half. Pygofer with posterodorsal margin oblique, with group of few submarginal macrosetae; apical portion turned mesad, forming short differentially sclerotized process which is rounded dorsally, the two processes approximate but not contiguous in caudal aspect. Style with conspicuous preapical lobe, and strongly curved apical extension. Connective a transverse bar. Aedeagus with dorsal apodeme laterally compressed, weakly bilobed ventrally at base; shaft slender in lateral aspect, curved dorsad, with pair of slender, apical retrorse processes, each of which has a lateral toothlike extension near its base; gonopore subapical on caudal face of shaft. Sternal abdominal apodemes short but traversing one conjunctiva.

Crown pale orange. Pronotum, scutellum and ground color of basal half of forewings bright orange, the basal scutellar angles yellowish. Forewings with a transcommissural, opaque creamy spot in basal halves of clavi and extending laterad into each brachial cell, its anterior

margin rectilinear, its posterior margin convex, and a similarly colored transcommissural spot at claval apices extending laterad on each wing through the brachial cell, bordered anteriorly with deep orange, laterally with pale orange, posteriorly with smoky. Costal plaque translucent pale yellow bordered narrowly with black on mesal and posterior margins. Apex of cell R with a large, translucent yellow spot. Wing apices smoky except an areole in apex of cell R, third and fourth apical cells, and apices of first and second apical cells, all of which are hyaline. Face yellow except a pink spot below each eye on gena; propleural area pink; venter pale to pink except margin of apical process of female seventh sternum and a spot on lower portion of male pygofer on each side, which are black.

Holotype male, allotype female, Apr. 29, 1950, two male paratypes and one female paratype, May 5, 1950, and two female paratypes, May 4, 1950, in Snow Entomological Collections; and one female paratype, May 5, 1950, and one male paratype and one female paratype, May 4, 1950, in U. S. National Museum; all from Santa Catarina, Nova Teutonia, Brazil (F. Plaumann).

***Rhabdotalebra brunnea* (Oman)**

FIGURE 30,*g–q*

Protalebra brunnea Oman, Journ. Agr. Univ. Puerto Rico, vol. 21, p. 567, 1937.
Rhabdotalebra brunnea; Young, Univ. Kansas Sci. Bull. 35, p. 36, 1952.

Length 2.6–2.8 mm. Crown with posterior margin obtusely angulate. Pronotum with median length about one-half greater than median length of crown. Male plates triangular, gradually tapered from base to apex, exceeding posterior pygofer margin, each with a quadrate group of macrosetae in basal half. Pygofer with a submarginal row of macrosetae along posterodorsal margin; posterior margin produced mesad in a process that is truncate dorsally, the two processes approximate in caudal aspect but not contiguous. Connective a transverse bar. Style with poorly defined preapical lobe; apical extension slightly decurved. Aedeagus with gonopore anteapical on caudal surface; a pair of short, strongly divergent, slender, acute processes arising opposite gonopore on anterior surface, extending laterad. Sternal abdominal apodemes well developed. Color pattern including two narrow transclaval, translucent bands.

***Rhabdotalebra brunnea brunnea* (Oman)**

FIGURE 30,*g–m*

For literature citation see synonymy under *R. brunnea*, above.

Length of male 2.6 mm., of female 2.7–2.8 mm. Crown with median length slightly greater than interocular width. Ocelli as in *R. octolineata* (Baker). Female seventh sternum short, the posterior margin slightly produced and rounded at middle. Male with dorsal

aedeagal apodeme bilobed at base. Sternal abdominal apodemes traversing three conjunctivae.

Ground color of dorsum pale tan; posterior margin of pronotum narrowly dull gray; apex of scutellum white; forewings with a transversely oval, translucent lacteus marking crossing commissure anteriorly at scutellar apex, posteriorly slightly beyond claval midlength, the design bordered narrowly with black before and behind, and involving the costal plaques laterally, twice narrowly interrupted with black on each wing at the intersections of the claval suture; an oblique vitta extending from costal margin to inner angle of base of outer apical cell, base and apex of outer apical cell, and anterior margin of transverse, transcommissural oval hyaline areole at claval apex, black; remaining apical veins, a broad area at midlengths of first and second apical cells smoky, their apices hyaline; third apical cell occasionally smoky. Face and legs pale yellow; pleural portion of pronotum dull gray; remainder of venter black; apical portion of ovipositor pale.

The holotype, from Villalba, Puerto Rico, is in the U. S. National Museum. The subspecies is known only from Puerto Rico.

***Rhabdotalebra brunnea colorata*, new subspecies**

FIGURE 30,*n–q*

Length of both sexes 2.7 mm. Crown with median length more than one-third greater than interocular width. Ocelli distinct, about equidistant from inner eye margins and median line of head. Female seventh sternum short, the posterior margin with a short, triangular median projection. Male with dorsal aedeagal apodeme not bilobed at base.

Crown pale gray, the margin between crown and face broadly pale red. Pronotum deep red, the humeral and posterior margins narrowly gray. Scutellum buff, the apex milky. Forewings with ground color opaque red to claval apex, an interrupted circular design in basal halves of two wings lacteus bordered with black, the circular pattern crossing commissure at apex of scutellum and in apical half of clavus, interrupted with red on each wing anteromesad of costal plaque and narrowly with black at two intersections of claval suture with design, and at outer margin of brachial cell; an oblique vitta extending from costal margin to inner angle of base of outer apical cell, the veins bordering outer apical cell, and third apical cell, basal portions of first and second apical cells, and margins of a transverse, transcommissural oval hyaline areole at claval apex, black; a broad area at midlength of first and second apical cells smoky, their apices hyaline. Face yellow; pleural portion of pronotum red; legs pale; male abdom-

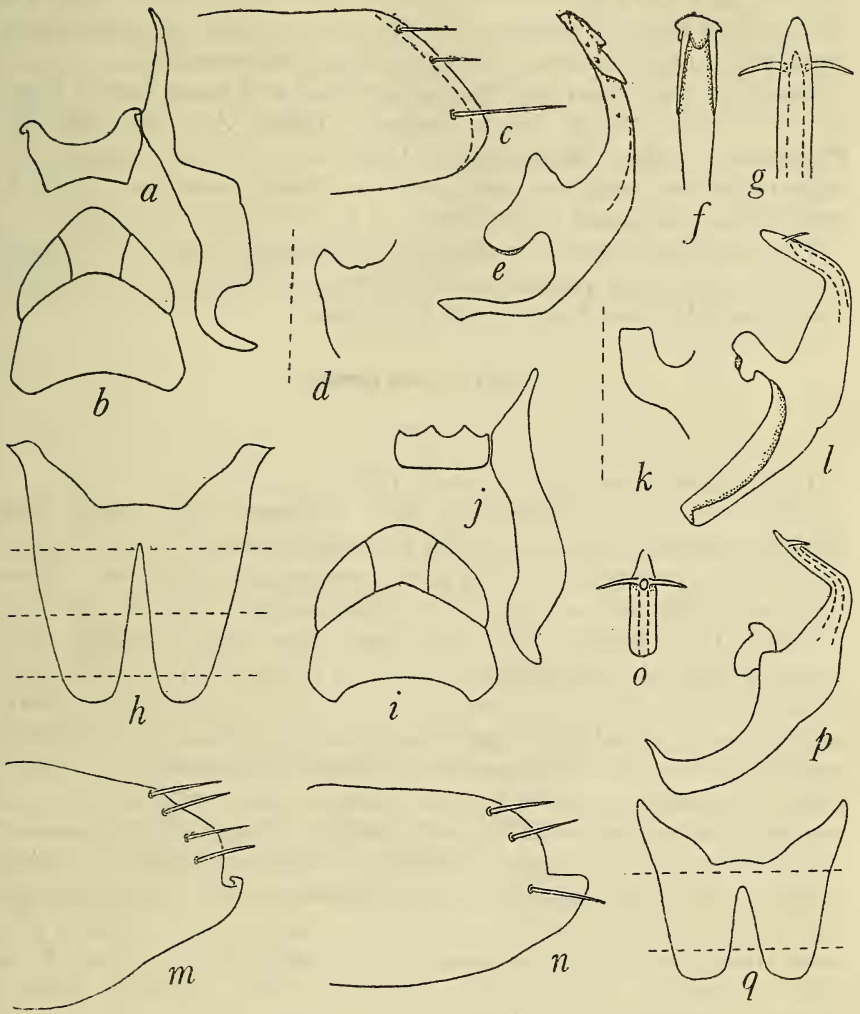

FIGURE 30.—*Rhabdotalebra*. *a–f*, *R. ornata:* *a*, style and connective, dorsal aspect (type); *b*, anterior dorsum (paratype); *c*, pygofer, lateral aspect (type); *d*, same, apex of right side, caudal aspect; *e*, aedeagus, lateral aspect (type); *f*, apex of aedeagus, caudal aspect. *g–m*, *R. brunnea:* *g*, apex of aedeagus, caudal aspect; *h*, sternal abdominal apodemes; *i*, anterior dorsum; *j*, style and connective, dorsal aspect; *k*, pygofer apex, right side, caudal aspect; *l*, aedeagus, lateral aspect; *m*, pygofer, lateral aspect. *n–q*, *R. brunnea colorata:* *n*, pygofer, lateral aspect; *o*, apex of aedeagus, caudal aspect; *p*, aedeagus, lateral aspect; *q*, sternal abdominal apodemes. (In *h* and *q* the broken lines represent conjunctivae.)

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inal venter dark basally, dull yellow apically, except darker ninth sternum and basal portion of plates; female venter dark except for median spot on sixth sternum and the entire seventh sternum except apex, yellow; apical fourth of ovipositor pale yellow or pink.

Holotype male, allotype female, two male and three female paratypes, Santa Catarina, Nova Teutonia, Brazil, Apr. 29, 1950 (F. Plaumann), in Snow Entomological Collections; one male paratype in same collections, and two male and two female paratypes, May 5, 1950 (other data same as holotype), in U. S. National Museum.

This subspecies may be distinguished readily from the typical subspecies by color pattern and the form of the sternal abdominal apodemes, which are longer in *R. b. brunnea.*

Abrela, new genus

FIGURE 31

Type of the genus, *Alebra robusta* Gillette.

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R evanescent apically; vein Cu_2 confluent with submarginal vein at point proximad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell broader near base than in apical half; second apical cell parallel-sided, its width at midlength greater than adjacent width of inner apical cell; third apical cell sessile, subtriangular; outer apical cell longer than broad, not attaining apical wing margin, its base distinctly proximad of base of third apical cell. Male plates exceeding posterior pygofer margin, each with longitudinal group of macrosetae on middle half of length. Pygofer with posterior margin truncate; macrosetae uniseriate, near and parallel to hind margin; pygofer process arising from ventral pygofer margin; pygofer wall with a distinct barlike thickening. Ninth tergum with a distinct triangular sclerite, separated from remainder of tergum by a line of flection. Anal process vestigial. Style elongate, slender, without preapical lobe. Connective a transverse bar. Aedeagus without dorsal apodeme; apex of shaft bifid. Sternal abdominal apodemes traversing one conjunctiva. Head not strongly produced, crown with median length less than interocular width; anterior margin broadly rounded in dorsal aspect; ocelli on broad margin between crown and face, closer to inner eye margins than to median line of head. Pronotum much longer than head; wider than head including eyes; lateral margins strongly divergent posteriorly. Face slightly convex in lateral aspect.

This genus may be closely related to the *Protalebrella* generic complex, which follows. Such a relationship is suggested by the bifurcate

aedeagus which is found in *Beamerulus* and *Diceratalebra*, and by the presence of a distinct ninth tergite which occurs in some stage of development in each genus of the *Protalebrella* complex (there delimited by integumental thickening, instead of line of flection, however). The lack of a dorsal aedeagal apodeme, a prominent structure

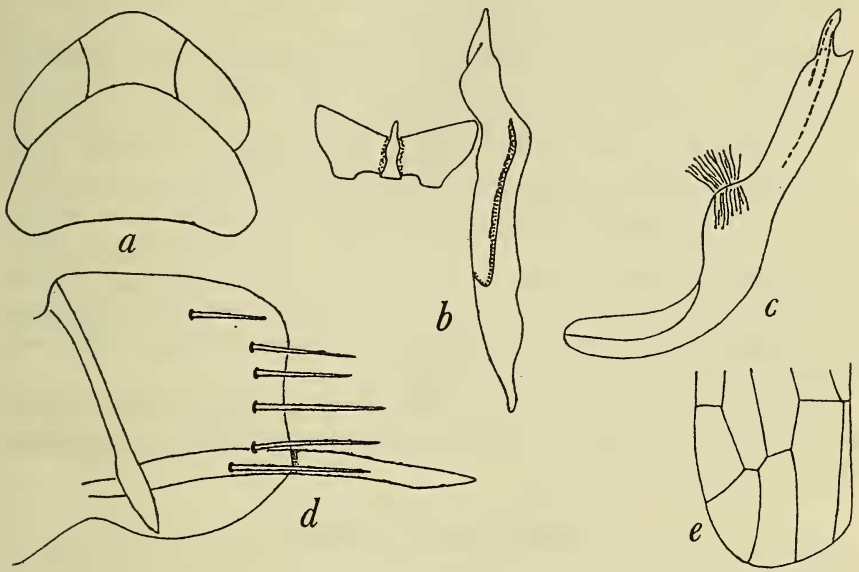

FIGURE 31.—*Abrela robusta: a*, anterior dorsum (type); *b*, style and connective, dorsal aspect; *c*, aedeagus, lateral aspect; *d*, pygofer, lateral aspect; *e*, apex of forewing (in situ).

in the *Protalebrella* complex, the presence of the integumental thickening of the pygofer wall, and the difference in the ninth tergite serve to set *Abrela* apart from the complex.

***Abrela robusta* (Gillette), new combination**

FIGURE 31

Alebra robusta Gillette, Proc. U. S. Nat. Mus., vol. 20, p. 712, 1898.
Diceratalebra robusta; Young, Univ. Kansas Sci. Bull. 35, p. 27, 1952.

Length of female 3.7 mm. Crown with median length slightly less than interocular width. Pronotum with median length twice median length of crown. Female seventh sternum narrow, posterior margin abruptly produced in a conspicuous truncate median tooth; pygofer with macrosetae mostly white, limited to apical half, a few black ones near ovipositor at its midlength. Male pygofer short; anterior portion of disc with pronounced diagonal differentially

sclerotized integumental thickening; pygofer processes elongate, slender, nearly straight, directed caudad and greatly exceeding posterior pygofer margin, the two processes subparallel in ventral aspect. Connective broadly V-shaped with a strong dorsal longitudinal keel. Aedeagus with preatrium elongate, troughlike; shaft bifid apically with the gonoduct in the longer dorsal ramus, dorsal margin in lateral aspect with slight anteapical indentation.

Ground color of crown and pronotum dull yellowish white, an apical and a pair of discal spots on crown and two longitudinal vittae on pronotum extending from near anterior margin to posterior margin, thence slightly laterad along margin, dull orange. Scutellum dull yellow with a broad median gray stripe. Forewings with ground color reddish black except hyaline apical portions of inner three apical cells, an inverted median V-shaped vitta across commissure near midlengths of clavi, four large costal blotches and one in apical half of brachial cell on each wing orange-red; veins in apical half of corium contrasting red; outer apical cell hyaline at base and apex, smoky at middle. Face and venter entirely pale.

Known only from the type, a male from Chapada, Brazil, and a pair of topotypic specimens bearing the same data as the type, all in the U. S. National Museum.

Beamerulus, new genus

FIGURE 32

Type of the genus, *Beamerulus beameri*, new species.

Hind wing with submarginal vein distinct at apex but forming a part of apical wing margin to apex of vein M_{1+2}; posterior branch of vein R evanescent apically; vein Cu_2 confluent with submarginal vein at point considerably proximad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell slender, not greatly wider in basal third than in apical half; second apical cell parallel-sided; third apical cell triangular or short-petiolate; outer apical cell longer than broad, not attaining apical wing margin, its base distinctly proximad of base of third apical cell; color pattern including a zigzag vitta of red, orange or black. Male plates elongate-triangular, equalling or exceeding posterior pygofer margin, each with single row of setae in apical two-thirds, some of these conspicuously black near middle of row, some fine and elongate apically. Pygofer with posterodorsal margin produced; macrosetae not in rows, arranged roughly parallel to posterior and posteroventral pygofer margin; pygofer process arising on ventral pygofer margin, slender and elongate, crossing midventral line in caudoventral aspect. Ninth tergum with a triangular area before anal tube bounded by distinct

integumental thickening both laterally and apically. Anal processes distinct, elongate, slender, almost attaining ventral pygofer margin. Style elongate, without preapical lobe. Connective triangular or shallowly U-shaped. Aedeagus with preatrium distinct; dorsal apodeme as long as shaft or longer; shaft bifurcate or abruptly narrowed apically. Head strongly produced, crown with median length exceeding interocular width; ocelli on rounded margin between crown and face, about equidistant from inner eye margins and median line of head. Pronotum at least one-half longer than crown, wider than head including eyes; lateral margins strongly divergent posteriorly. Face slightly convex in lateral aspect.

This genus is dedicated to Dr. R. H. Beamer of the University of Kansas, who collected two of the three known species.

Distribution: Mexico.

Beamerulus is closely related to *Diceratalebra*, from which it may be distinguished by its larger size, its color pattern, and its clearly delimited tergal area of the ninth segment. From *Protalebrella*, to which it is also closely related, *Beamerulus* can be distinguished by its distinct anal processes, its larger size and distinctive forewing markings, and its rounded forewing apices.

Key to species of *Beamerulus*

1. Forewing with brown vittae, crown and pronotum unmarked; male pygofer process without a distinct anteapical tooth on mesal margin in caudoventral aspect . . . . . **uniceratus,** new species
   Forewing with red vittae, crown and pronotum with orange markings; male pygofer process with a distinct anteapical tooth on mesal margin in caudoventral aspect 2
2. Crown with a pair of submarginal oblique orange markings near anterior margin; aedeagal shaft bifurcate apically . . . . . **beameri,** new species
   Crown with discal markings only; aedeagal shaft not bifurcate apically. **morelosensis,** new species

Beamerulus uniceratus, new species

FIGURE 32,*a–d*,

Length of male 4.2 mm. Crown with median length one-fifth greater than interocular width. Pronotum with median length one-half greater than median length of crown. Male plates scarcely exceeding posterior pygofer margin. Pygofer with posterodorsal margin strongly produced, subangulate; pygofer process in ventral aspect elongate, slender, gradually curved mesad, crossing midventral line in apical fifth, the mesal margin slightly excavated apically. Aedeagus without a ventral ramus, the ventral margin of shaft, in lateral aspect, narrowing abruptly in apical third of its length; dorsal apodeme elongate, as long as shaft, slightly expanded apically in lateral aspect.

Crown and scutellum ivory, the latter with basal angles dull yellow. Pronotum gray, the humeral areas paler and suffused with brown. Forewing hyaline with a chocolate brown zigzag vitta beginning in base of clavus, extending in clavus along claval suture to midlength, there giving off a short mesal branch to commissural margin, crossing claval suture at midlength and extending posterolaterad to a dark spot at midlength of costa, thence caudomesad, ending in apex of brachial cell; wing apex with an arcuate, deep smoky vitta beginning in basal third of inner apical cell, extending laterad through base of second apical cell, caudad along third apical vein, thence caudad along costal margin into apex of second apical cell. Beneath as in *B. beameri* Young (below) but without markings on pleural portion of pronotum.

Holotype male, Cuernavaca, Morelos, Mexico, Oct. 21, 1941 ("K. 57") (DeLong, Good, Caldwell and Plummer), in collection of D. M. DeLong.

***Beamerulus beameri*, new species**

FIGURE 32,*e–j*

Length of both sexes 4.0 mm. Crown with median length one-fifth greater than interocular width. Pronotum with median length one-half greater than median length of crown. Female seventh sternum with posterior margin broadly convex each side of prominent median tooth which is blunt apically and dark margined; pygofer with three or four black macrosetae on each side of ovipositor near its midlength, in addition to the usual pale macrosetae. Male plates exceeding posterior pygofer margin. Male pygofer with posterodorsal apex rounded; pygofer process appearing crescentiform in caudoventral aspect, chelate apically. Aedeagal shaft bifurcate at apex with ventral ramus greatly reduced, much less than half length of dorsal ramus; dorsal apodeme elongate, exceeding apex of aedeagus. Sternal abdominal apodemes short, not traversing one conjunctiva.

Ground color of dorsum pale cream, crown with two pairs of spots adjoining inner eye margins, the more anterior elongate, submarginal, the more posterior, short, oval, slightly behind middle of disc, pink; pronotum with a transverse vitta across disc before midlength giving off a short straight anterior, and an oblique, longer posterior extension at each end, the anterior extensions not attaining anterior pronotal margin, the posterior extensions attaining and expanded along humeral margins, sanguineous. Scutellum usually with a quadrate, sanguineous median marking at base (absent in holotype). Forewing with a zigzag sanguineous vitta extending from base along claval suture to commissural margin at midclavus, thence posterolaterad

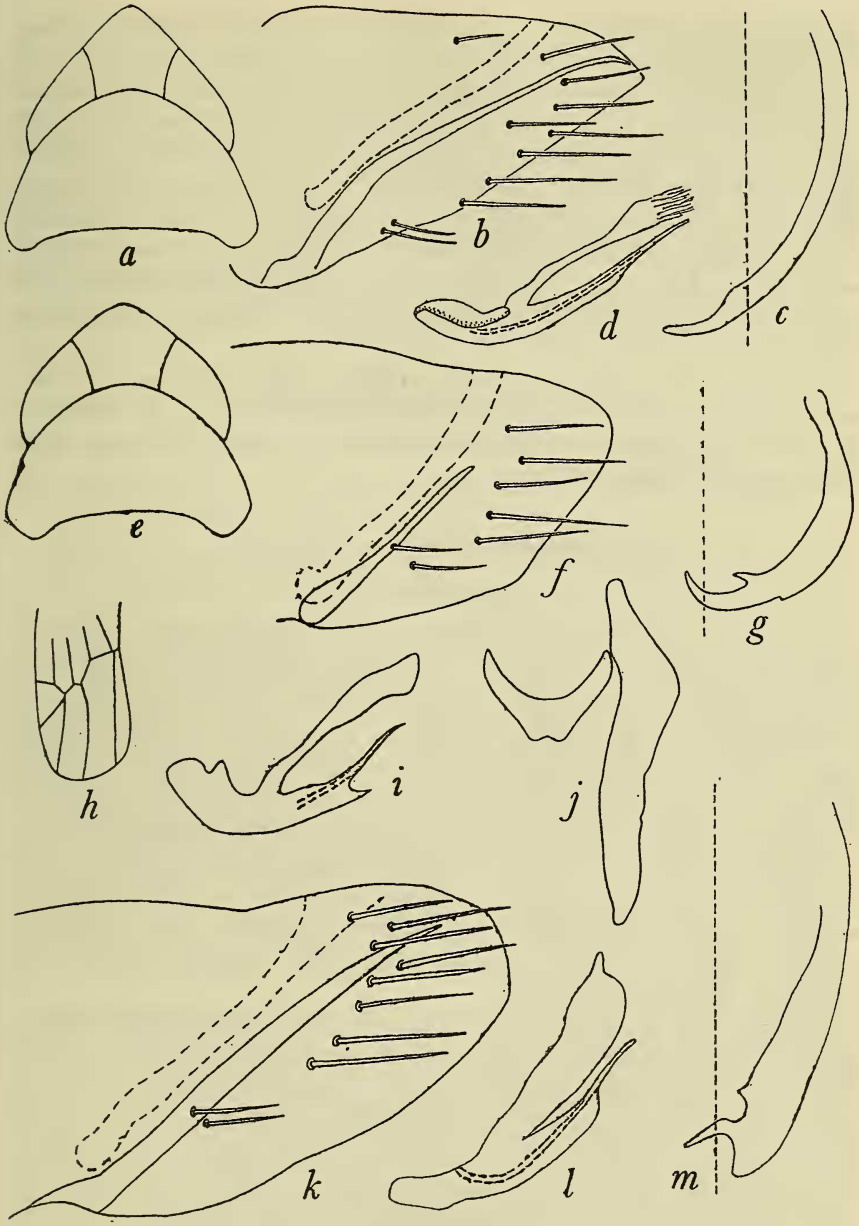

FIGURE 32.—*Beamerulus*. *a–d*, *B. uniceratus* (type): *a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, pygofer process, caudoventral aspect; *d*, aedeagus, lateral aspect. *e–j*, *B. beameri*: *e*, anterior dorsum (type); *f*, pygofer, lateral aspect; *g*, pygofer process, caudoventral aspect; *h*, apex of forewing; *i*, aedeagus, lateral aspect (type); *j*, style and connective, dorsal aspect. *k–m*, *B. morelosensis* (type): *k*, pygofer, lateral aspect; *l*, aedeagus, lateral aspect; *m*, pygofer process, caudoventral aspect. (In *b*, *f*, and *k* the broken lines represent anal processes; in *c*, *g*, and *m*, the midline of the specimen.)

through corium to a black spot behind midlength of costa, thence arched posteromesad to inner basal angle of inner apical cell and posterolaterad to base of third apical cell; corium with a short arched longitudinal vitta near base of costa, pink to sanguineous; a small spot at claval apex, an arch extending from basal third of inner apical cell posterolaterad through base of second apical cell, along apex of outer apical cell to apical wing margin, along margin through apex of second apical cell, and outer portion of base of outer apical cell, black. Face and venter pale stramineous, apices of hind tibiae black; pleural portion of pronotum with an oblique, sanguineous dash.

Holotype male, allotype female, and two male paratypes, 10 km. north of Cuernavaca, Morelos, Mexico, Dec. 28, 1949 (R. H. Beamer), in Snow Entomological Collections; male and female paratypes, same data, in U. S. National Museum.

***Beamerulus morelosensis*, new species**

FIGURE 32,*k–m*

Length of male 4.5 mm. Crown with median length one-sixth greater than interocular width. Pronotum with median length one-seventh greater than median length of crown. Male plates scarcely exceeding posterior pygofer margin. Pygofer with posterodorsal apex rounded, pygofer processes in caudoventral aspect rounded apically, convergent, each with a pair of mesal anteapical protuberances, the more apical one much longer, slender, slightly curved, crossing the midventral line. Aedeagal shaft with a dorsal apical process, ventral ramus absent; dorsal apodeme exceeding apex of aedeagus, greatly expanded in lateral aspect, its least width exceeding greatest width of shaft. Sternal abdominal apodemes short, not attaining second conjunctiva.

Ground color of dorsum lacteus, head with a narrow line on margin between crown and face, interrupted at apex, and a pair of quadrate discal spots on crown behind middle, touching inner eye margins, pronotum with marking similar to *B. beameri* Young, orange. Scutellum lacteus medially, basal angles very pale yellow, apex black. Forewing with a zigzag vitta as in *beameri*, orange in basal half, sanguineous in apical half, the apical portion twice interrupted basad of apical cells, the base of the vitta, in clavus, extending mesad to point opposite apex of scutellum; corium with basal costal vitta as in *beameri*, orange, dark markings as in *beameri* but outer apical cell almost completely dark margined; clavus with a diffuse pink spot near midlength of apical half; basal fourth of inner apical cell and adjoining appendix pale smoky. Face and venter as in *beameri*.

This species is closely related to and can be easily confused with *beameri*. The styles, the general form of the pygofer processes, the anal processes, the shape of the pygofer and its setal pattern, as well as the color are strongly similar to *beameri*, and force its inclusion in the same genus with *beameri*. From the latter *morelosensis* is distinct in its lack of a ventral aedeagal ramus, its expanded dorsal aedeagal apodeme, the details of the pygofer process and minor details of the color pattern. The aedeagus strongly suggests a relationship to *Protalebrella*.

Holotype male, 10 km. north of Cuernavaca, Morelos, Mexico, Dec. 28, 1949 (R. H. Beamer), in Snow Entomological Collections.

Genus Diceratalebra Young

FIGURES 33, 34

Diceratalebra Young, Univ. Kansas Sci. Bull. 35, p. 26, 1952 (type *Alebra sanguinolinea* Baker, by original designation).

Hind wing with submarginal vein confluent with apical wing margin or not; posterior branch of vein R usually entire apically; vein Cu_2 confluent with submarginal vein at point proximad of vein m-cu. Forewing with appendix usually not extending around wing apex which is rounded; inner apical cell broad basally, narrower in apical half (exception: *pusilla* Young); second apical cell narrow basally, lateral margins almost parallel; third apical cell usually triangular or petiolate; outer apical cell short, not attaining wing apex, its base distinctly proximad of base of third apical cell; color pale marked with orange and black. Female seventh sternum large, posterior margin broadly convex or with a distinct median tooth. Male plates elongate, slender, exceeding posterior pygofer margin, each with single, longitudinal row of macrosetae. Pygofer with posterodorsal portion produced posteriorly, disc with a vertical or oblique group of macrosetae, and occasionally with other additional macrosetae; pygofer process arising on ventral or caudoventral margin or on disc near margin. Ninth tergum with tergite clearly delimited laterally or not, not delimited apically. Anal processes present, usually short, not ending near ventral pygofer margin. Style short, without distinct preapical lobe, slightly curved at apex. Aedeagus short, laterally compressed, appearing bifid at apex, the dorsal ramus containing the gonoduct, dorsal apodeme strongly developed. Head produced with apex rounded. Ocelli on broadly rounded margin between crown and face, about equidistant from inner margins of eyes and median line. Pronotum wider than head including eyes, lateral margins divergent posteriorly. Face in profile with contour usually strongly divergent from line of crown.

Distribution: Southwestern United States, Mexico, Islas Revilla Gigedo, Central America.

The relationship of *Diceratalebra* to *Protalebrella* and *Beamerulus* is discussed in the generic descriptions of those genera. It is also closely related to *Barela*, new genus, no species of which have the bifurcate aedeagal shaft characteristic of *Diceratalebra*.

Key to species of *Diceratalebra*

1. Forewing with appendix extending partially around wing apex; ground color of dorsum olive green, without orange markings; male with pygofer process extending caudodorsad almost parallel to caudoventral pygofer margin (occurs in Texas) . . . . . **interrogata** (Knull)
   Forewing with appendix extending to apex but not around it; ground color unmarked pale yellowish or pale yellowish marked with orange; male pygofer process not as above 2
2. Male pygofer process branched apically or with a short anteapical spur . . . 3
   Male pygofer process not so 4
3. Aedeagus with dorsal ramus more than twice length of ventral ramus; male pygofer process with a short anteapical spur; pronotum with short discal parallel orange markings (occurs on Socorro Island) . . . **sola**, new species
   Aedeagus with the two rami of about equal length; male pygofer process bifurcate apically; pronotum with semicircular orange band (occurs in Mexico). **quadricerata**, new species
4. Male pygofer process arising ventrally, extending dorsocaudad 5
   Male pygofer process arising along caudoventral margin, extending caudoventrad . . . . . **sanguinolinea** (Baker)
5. Crown of male with median length exceeding interocular width; forewing with third apical cell triangular; dorsum marked with yellow, orange, and black. **caldwelli** (Ruppel and DeLong)
   Crown with median length less than interocular width; forewing with third apical cell quadrilateral; dorsum unmarked pale yellow . **pusilla**, new name

***Diceratalebra sanguinolinea* (Baker)**

FIGURE 33,*a–e*

Alebra sanguinolinea Baker, Invertebrata Pacifica, vol. 1, p. 5, 1903.
Protalebra cubana Osborn, Ann. Ent. Soc. Amer., vol. 19, p. 353, 1926, new synonymy.
Protalebra montana Caldwell, Journ. Agr. Univ. Puerto Rico, vol. 34, p. 96, 1952, new synonymy.
Diceratalebra sanguinolinea; Young, Univ. Kansas Sci. Bull. 35, p. 27, 1952.

Length of male 3.2 mm., of female 3.3 mm. Crown with median length almost one-half greater than interocular width. Pronotum with median length one-third greater than median length of crown; lateral margins slightly divergent posteriorly. Forewing with appendix not extending around apex. Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire. Face broadly convex in lateral aspect. Female seventh sternum with

posterior margin broadly convex. Male plates triangular, gradually tapered from base to apex, with a row of macrosetae extending from near base to apex. Pygofer with process discal, arising on inner surface, slender, short, curved ventrolaterad. Anal process not attaining middle of disc of pygofer. Connective elongate, triangular with apex rounded, almost attaining style apex, appearing jointed before midlength. Aedeagus short, broad, preatrium wanting, ventral apical ramus shorter and broader than dorsal ramus. Sternal abdominal apodemes traversing one conjunctiva.

Ground color of crown, pronotum, and scutellum dull yellowish white, the pronotum marked with a broad, marginal, orange-red band along anterior and lateral margins. Forewings milky translucent, a vitta in basal half of clavus extending along claval suture, thence abruptly bent mesad to commissure, an irregular oblique vitta extending from near base of coastal margin caudomesad to slightly beyond midlength of brachial cell, a similar oblique vitta extending from coastal plaque to apex of brachial cell, concolorous with pronotal band, apical half of clavus with a faint yellow commissural spot, apical portions of first, second, and third apical cell smoky. Venter entirely dull yellow

Six cotypes from San Marcos, Nicaragua, in the Pomona College collection, have been examined and cotype labels have been affixed. A male cotype from the series is here designated lectotype. Specimens have also been examined from Chinandega, Nicaragua.

The new synonymy above is based on examination of the types of the names involved. The Osborn type and the Caldwell type are in the U. S. National Museum.

Diceratalebra sola, new species

FIGURE 33,*f–h*

Length of male 2.7 mm., of female 2.8 mm. Crown with median length one-fourth greater than interocular width. Pronotum with median length one-fourth less than median length of crown; with lateral margins not strongly divergent posteriorly. Forewing with appendix not extending around wing apex. Hind wing with submarginal vein confluent with wing apex; posterior branch of vein R entire. Female seventh sternum with posterior margin broadly convex. Male plates each with longitudinal row of small macrosetae on basal half. Pygofer with vertical row of macrosetae extended slightly anteroventrad at lower end; pygofer process arising on caudoventral pygofer margin, short, divergent from posterior pygofer margin in lateral aspect, with a short, ventral spur at midlength; pygofer processes parallel in ventral aspect. Anal process extending

ventrad to middle of pygofer. Connective trapezoidal. Aedeagus similar to that of *D. interrogata* (Knull) (below), but with preatrium and dorsal ramus longer, dorsal apodeme shorter. Sternal abdominal apodemes traversing two conjunctivae.

Ground color of crown, pronotum, scutellum and clavus dull yellow; crown with median longitudinal paler vitta; pronotum with four large orange spots across disc; scutellum unmarked; clavi with a pair of parentheses-shaped vittae (occasionally interrupted) in basal half and each clavus with a spot next apex of scutellum, orange, a faint yellow spot in apical half of clavus. Corium hyaline, a faint yellow, irregular, transverse band opposite claval apex, curved slightly cephalad, terminating laterally in a narrow smoky oblique dash bordering hind margin of costal plaque; apical veins pale bordered with sharply contrasting black; apical portions of first, second and third apical cells smoky. Face and venter pale, bases of posttibial spines apices of posttibiae, and a mesal spot in apical half of each male plate, black.

Holotype male, allotype female, and male paratype, Socorro Island, Revilla Gigedo group, 2,000 ft., May 9, 1925 (H. H. Keifer). Holotype and allotype in collection of California Academy of Sciences, paratype in U. S. National Museum.

This species is closely related to *D. sanguinolinea* but differs in the branched pygofer process not present in the latter. Externally the two species may be readily distinguished by the orange markings of the pronotum forming an inverted "U" in *D. sanguinolinea;* longitudinal vittae in *D. sola.*

***Diceratalebra interrogata* (Knull)**

FIGURE 33,*i–m*

Alebra interrogata Knull, Ent. News, vol. 51, p. 291, 1940.
Diceratelebra interrogata; Young, Univ. Kansas Sci. Bull. 35, p. 27, 1952.

Length of male 2.9 mm., of female 3.1 mm. Crown slightly produced, the apex rounded; median length slightly less than interocular width. Pronotum with lateral margin strongly divergent; posterior margin smoothly, shallowly concave or subangulate. Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire apically. Forewing with appendix extending partly around apex; venation as in *D. sanguinolinea* (Baker). Female seventh sternum with posterior margin strongly convex. Male pygofer with vertical row of discal macrosetae extended anteroventrad; pygofer process slender and tapered, parallel to posteroventral pygofer margin, the two processes parallel in ventral aspect. Anal

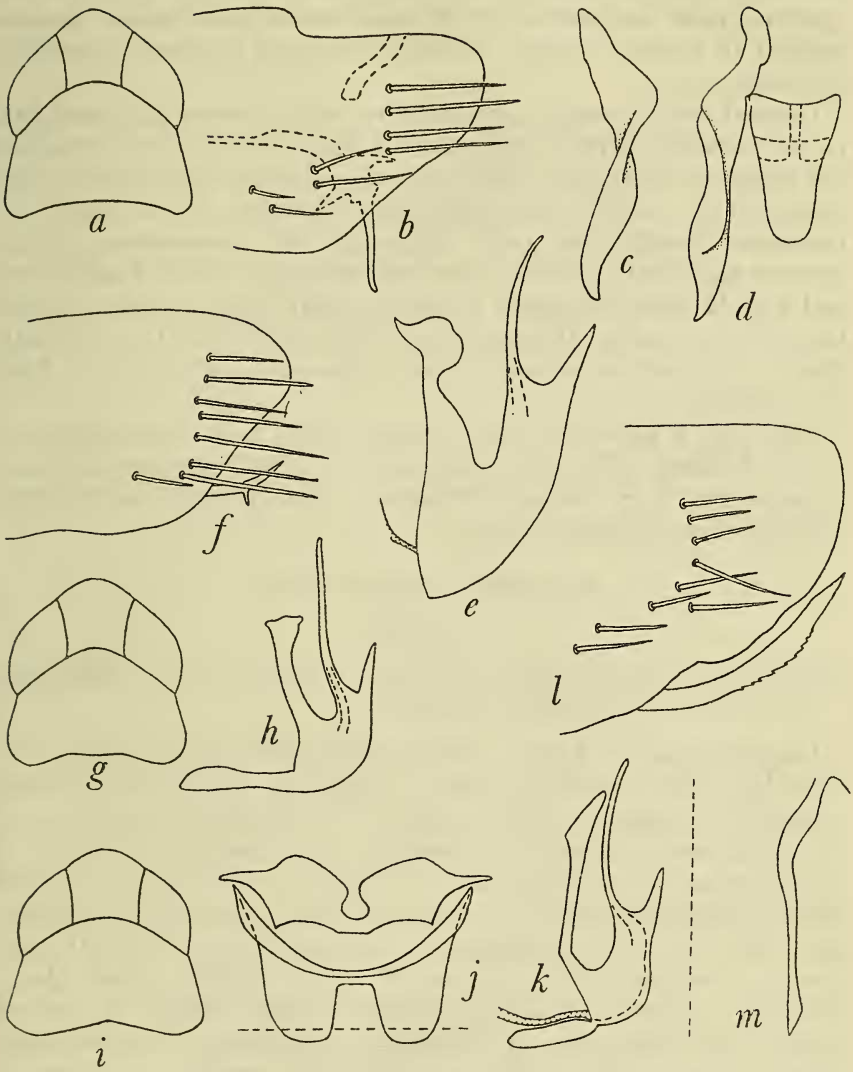

FIGURE 33.—*Diceratalebra*. *a–e*, *D. sanguinolinea: a*, anterior dorsum; *b*, pygofer, lateral aspect (dorsal broken line represents anal process); *c*, style, lateral aspect; *d*, style and connective, dorsal aspect; *e*, aedeagus, lateral aspect. *f–h*, *D. sola* (type): *f*, pygofer, lateral aspect, *g*, anterior dorsum; *h*, aedeagus, lateral aspect. *i–m*, *D. interrogata: i*, anterior dorsum; *j*, sternal abdominal apodemes and phragma (conjunctiva represented by broken line); *k*, aedeagus, lateral aspect; *l*, pygofer, lateral aspect; *m*, pygofer process, caudoventral aspect (broken line represents midline of specimen).

process not attaining middle of disc of pygofer. Connective weak, subtrapezoidal. Aedeagus as in *D. sanguinolinea* but with dorsal apodeme more elongate and with dorsal ramus much longer in comparison to ventral ramus. Sternal abdominal apodeme traversing one conjunctiva.

Ground color of crown, pronotum, scutellum, clavus and basal half of corium dull yellowish green, a dull white median vitta extending full length of crown, and continued over pronotum as dull gray vitta, extending laterad along posterior pronotal margin; lateral margins of pronotum broadly dull gray. Forewing with conspicuous hyaline spots at midlength of clavus, near base of corium, and in brachial cell and cell M near midlength of wing; costal plaque hyaline; apical third of wing hyaline, the apical veins contrasting ivory bordered with black; apical portion of each of inner three apical cells smoky. Face and venter pale.

The type, a male from Starr County, Tex., is in the collection of Dr. D. J. Knull. The above description is based on topotypic paratypes in the U. S. National Museum. The species is known from Texas and northeastern Mexico.

***Diceratalebra pusilla*, new name**

FIGURE 34,*a–f*

Protalebra pallida Ruppel and DeLong, Ohio Journ. Sci., vol. 53, p. 228, 1953 (nec Osborn, 1928, p. 260), new synonymy.

Length of male 3.3 mm. Crown with median length about one-sixth less than interocular width. Pronotum with median length almost twice median length of crown. Forewing with appendix not extending around apical wing margin; inner apical cell broadest at midlength, not distinctly broader at base than at apex; second apical cell about half length of inner apical cell; third apical cell quadrangular. Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire apically. Male plates triangular, scarcely exceeding posterior pygofer margin in ventral aspect, each with a row of macrosetae extending over middle half. Pygofer process arising from ventral pygofer margin near base, in lateral aspect extending posterodorsad and curved caudad in apical third, in caudoventral aspect the two processes contiguous at their acute apices. Anal process not attaining middle of disc of pygofer. Connective a transverse bar. Aedeagus shorter than dorsal aedeagal apodeme; preatrium distinct; ventral ramus of aedeagal apex less than one-fourth length of dorsal ramus.

Ground color of dorsum pale yellow, the forewing translucent, with an areole at apex of cell R and of cell M, and areoles of all apical cells,

hyaline; a spot at base of second apical cell, an oblique dash before midlength of first apical cell, and vein at base of outer apical cell, fumose. Face and venter entirely pale yellow.

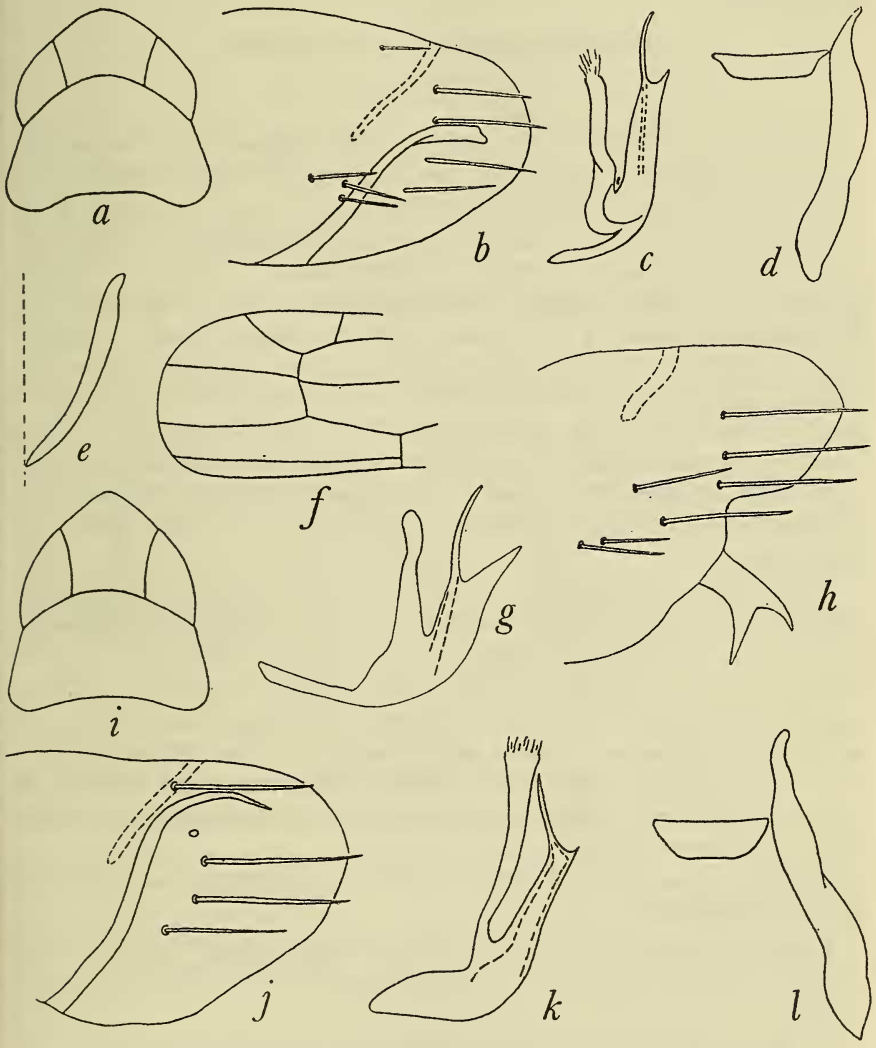

FIGURE 34.—*Diceratalebra*. *a–f*, *D. pusilla* (type); *a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, aedeagus, lateral aspect; *d*, style and connective, ventral aspect; *e*, pygofer process, caudoventral aspect; *f*, apex of forewing (in situ). *g–h*, *D. quadricerata*: *g*, aedeagus, lateral aspect; *h*, pygofer, lateral aspect. *i–l*, *D. caldwelli* (type): *i*, anterior dorsum; *j*, pygofer, lateral aspect; *k*, aedeagus, lateral aspect; *l*, style and connective, dorsal aspect. (In *b*, *h*, and *j* the broken lines represent anal processes; in *e*, the midline of the specimen.)

This species is known only from the type, a male from Iguala, Guerrero, Mexico, in the DeLong collection. The above description is based on the type, which was examined through the kindness of Dr. DeLong.

***Diceratalebra quadricerata*, new species**

FIGURE 34,*g,h*

Length of male 3.0 mm. Crown with median length one-third greater than interocular width. Pronotum with median length less than one-half greater than median length of crown. Forewing as in *D. sanguinolinea* (Baker). Hind wing with submarginal vein confluent with wing apex; posterior branch of vein R entire. Male plates exceeding posterior pygofer margin; row of macrosetae extending from near base almost to apex. Pygofer with irregular, oblique group of macrosetae parallel to caudoventral margin; process arising on posteroventral margin, short, stout, bifurcate apically, directed caudoventrad. Anal process weak, not attaining middle of disc of pygofer. Connective in form of cross-bar. Aedeagus with preatrium well developed, shaft bifid apically, the dorsal ramus more slender and longer than ventral ramus. Sternal abdominal apodemes traversing two conjunctivae.

Crown ivory. Pronotum, scutellum and forewings translucent white, an arcuate marking on pronotum extending along anterior margin from one humeral margin to other, each forewing with a constricted vitta in basal half of clavus, an oblique angulate vitta from basal fourth of costa to claval suture at midlength, and an oblique vitta from midcosta to claval apex, orange, the last vitta darkened at costal margin; a pale yellow commissural spot in apical half of clavus; apical veins bordered with and first and second apical cells filled with fuscous. Face and venter pale.

Holotype male, "M. B. 260," Mexico (A. Dampf), in collection of D. M. DeLong.

The arcuate orange pronotal band readily separates this species from *D. sola*, the only other species in the genus with a forked pygofer process.

***Diceratalebra caldwelli* (Ruppel and DeLong), new combination**

FIGURE 34,*i–l*

Protalebra caldwelli Ruppel and DeLong, Ohio Journ. Sci., vol. 53, p. 228, 1953.

Length of male 3.2 mm. Head strongly produced; crown with median length almost one-third greater than interocular width. Pronotum with median length about one-sixth greater than median

length of crown. Forewing with appendix not extending around wing apex; third apical cell triangular. Hind wing with submarginal vein confluent with wing apex; posterior branch of vein R evanescent apically. Face broadly convex in lateral aspect, weakly divergent from profile of crown. Male plates triangular, gradually tapered from base to apex, each with longitudinal row of conspicuous black spatulate macrosetae on middle half of length. Pygofer with process arising on ventral margin near base, elongate, tapering, acute apically, curving dorsomesad, thence caudad. Anal process attaining middle of disc of pygofer. Connective a transverse bar. Aedeagal shaft shorter than dorsal aedeagal apodeme, preatrium distinct, ventral apical ramus consisting of a very short tooth.

Dorsum dull, pale yellowish, the forewings translucent, a spot in basal half of clavus and one before apex, two faint spots in basal half of corium and a portion of costal margin before outer apical cell, faint yellow; claval apex and a curved marking extending through base of third apical cell, an area at apex of outer apical cell, thence narrowing along costal margin to near apex, black; bases of first and second apical cells narrowly smoky; apices of cells R and M orange. Face and venter pale, apical hind tarsomeres and the spatulate macrosetae of the male plates contrasting black.

This species is known only from the type series, from Mexico. The holotype has been examined through the kindness of Dr. DeLong.

Genus *Protalebrella* Young

FIGURES 35, 36

Protalebrella Young, Univ. Kansas Sci. Bull. 35, p. 38, 1952 (type *Protalebra brasiliensis* Baker, by original designation).

Hind wing with submarginal vein not distinct from apical margin; posterior branch of vein R entire apically, vein Cu_2 confluent with submarginal vein near midlength of wing. Forewing with apex obliquely truncate or falcate, appendix not extending around apical wing margin; second apical cell parallel-sided; third apical cell triangular or petiolate; outer apical cell broad, short, not attaining wing apex, its base distinctly proximad of base of third apical cell. Male plates elongate-triangular, exceeding pygofer, each with longitudinal group of macrosetae throughout length. Pygofer with few macrosetae; pygofer process arising dorsally or along posterior pygofer margin. Ninth tergite and anal processes absent. Style usually short, with or without preapical lobe. Connective usually a transverse bar. Aedeagus entirely without processes, with dorsal apodeme slender and elongate, preatrium usually well developed. Head transverse or triangular, the apex rounded or acute in dorsal aspect;

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in lateral aspect with face convex and strongly divergent from contour of crown; ocelli on rounded margin between crown and face, equidistant from inner eye margin and median line of head, or slightly nearer the latter. Pronotum with lateral margins divergent posteriorly, posterior margin broadly, shallowly concave.

Distribution: Neotropical Region.

Protalebrella is closely related to *Beamerulus*, in the above discussion of which distinguishing characters are mentioned. It is also closely related to *Barela* and *Diceratalebra*, neither of which contains species with the forewing apices truncate or falcate, with anal processes completely absent, or with pygofer processes arising dorsally or caudally on the pygofer, all of these features being characteristic of *Protalebrella*. From *Diceratalebra*, *Protalebrella* is further differentiated by its lack of a distinct ventral process at the apex of the aedeagal shaft, although the abrupt narrowing of the shaft suggests that such a process has been lost phyletically. None of the species of *Protalebrella* are marked with orange or green diagonal vittae, of common occurrence in *Barela* and *Diceratalebra*. The orange-marked species of *Protalebrella* have transverse markings.

As this paper goes to press, a new species of *Protalebrella*, *P. schachovskoyi* Torres (Neotropica, vol. 1, p. 89, 1955) comes to hand. Torres' species is very closely related to *P. iris*, new species, below, but the latter appears distinct in its single row of macrosetae on the male plate and its shorter sternal abdominal apodemes.

Key to species of *Protalebrella*

1. Forewing with anal margin bordered with black 2
   Forewing not so 3
2. Length 3 mm. or less; crown with median length equal to or slightly less than interocular width; male pygofer process not bifurcate at apex.
   brasiliensis (Baker)
   Length 3.3 mm.; crown with median length almost one-half greater than interocular width; male pygofer process bifurcate apically.
   conica (Ruppel and DeLong)
3. Chief color marking of dorsum an inverted sagittate transcommissural figure; forewing with second apical cell less than half length of first; male pygofer process arising dorsally, extending caudoventrad . . . . . **iris**, new species
   Chief color marking of dorsum consisting of undulate transverse vittae; forewing with length of second apical cell half or more length of first; male pygofer process not extending caudoventrad 4
4. Male with pygofer processes elongate, extending caudad much beyond posterior pygofer margin; aedeagus not abruptly narrowed at midlength.
   terminata (Baker)
   Male pygofer processes not as above, aedeagus abruptly narrowed near midlength. 5
5. Male pygofer with an elongate process extending ventrad in addition to short bifurcate process . . . . . **parana**, new species
   Male pygofer with short bifurcate process only. . . **panamensis**, new species

***Protalebrella brasiliensis* (Baker)**

FIGURE 35,*a–f*

Protalebra brasiliensis Baker, Psyche, vol. 8, p. 405, 1899.
Protalebrella brasiliensis; Young, Univ. Kansas Sci. Bull. 35, p. 39, 1952.

Length of male 2.7–3.0 mm., of female 2.9–3.0 mm. Head only slightly produced, median length of crown equal to or slightly less than interocular width. Pronotum with median length one-half greater than median length of crown; width exceeding width of head including eyes. Ocelli about midway between inner margin of eye and median line of head. Female seventh sternum large, posterior margin transverse, broadly convex, with a very minute median tooth. Male plates each with a single submarginal row of macrosetae. Male pygofer short, in lateral aspect with posterodorsal margin produced posteriorly in a rounded lobe that gives rise to an elongate, slender pygofer process directed ventrad and slightly mesad, the apex acute and exceeding posteroventral pygofer margin. Style short, preapical lobe present, apical extension curved slightly posteroventrad. Connective in form of transverse bar. Aedeagus with preatrium short; shaft tapering in basal half, slender and very slightly arched caudad in apical half. Sternal abdominal apodemes not traversing one conjunctiva.

Crown straw yellow to sordid yellow with a median short dark marking near posterior margin; disc with a pair of ocellus-like darker markings near anterior margin. Pronotum, except yellow lateral margins, black, with three submarginal spots behind disc of crown yellow, with four longitudinal narrow streaks extending from near midlength to hind margin dull yellow to bluish gray. Scutellum concolorous with pronotum, the median line and a dot on each side along transverse sulcus, yellow. Forewing with ground color golden yellow, a streak along anal margin and basal half of commissure ending beyond midlength of clavus in a dark-bordered translucent areole, black, a broad black vitta extending from costal plaque caudomesad to touch claval suture opposite end of claval vitta, thence narrowly caudad in brachial cell almost to its apex thence laterad to include entire anteapical portion of the wing including the apices of the anteapical cells, enclosing translucent areoles near clavus, in apex of cell R and of cell M, in base of first and of second apical cells, and in outer apical cell; wing apex narrowly translucent. Venter entirely pale except a dark spot along mesal margin near midlength of each male plate. Abdominal dorsum with a black marking near base and another near apex.

Some variation has been noted in the length of the pygofer processes of the male (fig. 35,*b*,*d*), but supporting evidence is lacking for considering the males with atypically shorter processes as distinct taxa, and males with such processes have been found in samples from populations typical in the character.

The type, a male from Chapada, Brazil, is in the U. S. National Museum. Male specimens have been examined from the following localities: United States: *Georgia:* Savannah. *Florida:* Orlando, Sanford, Biscayne Bay, LaBelle, Key Largo. Cuba: Caimito, Habana, Santiago de las Vegas, Baracoa, Santo Tomás, Taco Taco, Balúa Honda. Haiti: Port au Prince. Dominican Republic: Santo Domingo, San Cristóbal. Puerto Rico: Mayagüez, Adjuntas, Bayamon, Aquadilla, Utuado, Arecibo, Río Piedras, Carite Mountain, El Pastilli, Aibonito, Cambalache, Loiza, Vieques Island. Virgin Islands: St. Thomas. British West Indies: Trinidad. Jamaica: Kingston, "I. Baron Trelawney." British Honduras: Punta Gorda. Venezuela: Caracas, El Valle. Ecuador: Tena. Brazil: Campinas, Rezende, Nova Teutonia, Belem, Escada, Niteroi, Chapada, Rio Caraguata. Paraguay: Villarica. Argentina: Tucumán, Chaco Province, Santa Fé Province. Panama: Coclé, Darién, Herrera, Los Santos, and Panamá Provinces. Bolivia: Provincia del Sara.

This species has been taken from grasses and bushes.

***Protalebrella conica* (Ruppel and DeLong), new combination**

Figure 35,*g–j*

Protalebra conica Ruppel and DeLong, Ohio Journ. Sci., vol. 53, p. 228, 1953.

Length of both sexes 3.3 mm. Crown narrowly triangular with apex rounded, median length about one-half greater than interocular width. Pronotum short, broad, median length less than one-half greater than median length of crown; lateral margins strongly divergent posteriorly. Ocelli closer to median line than to inner eye margins. Female seventh sternum large, hind margin strongly produced medially, the apex acute or sharply rounded. Male plates gradually tapered from base to apex, each with a single row of macrosetae. Male pygofer with posterior margin concave, posteroventral angle extending mesad as a short process, acute and recurved apically; pygofer process arising dorsally near posterior pygofer margin, extending ventrad, widely bifurcate at apex. Style without distinct preapical lobe, bisinuate in lateral aspect, the apex acute and curved caudoventrad. Connective Y-shaped, the unpaired portion short and thick. Aedeagus with preatrium well developed; dorsal apodeme much broader, the shaft shorter and broader than in *P. brasiliensis* (Baker).

Color greatly variable in intensity. The following description refers to well-marked specimens. Ground color of crown, pronotum and forewings pale yellow. Pronotum with a broad median longitudinal black vitta extending from margin to margin, the median line contrastingly paler throughout. Scutellum black, the median line

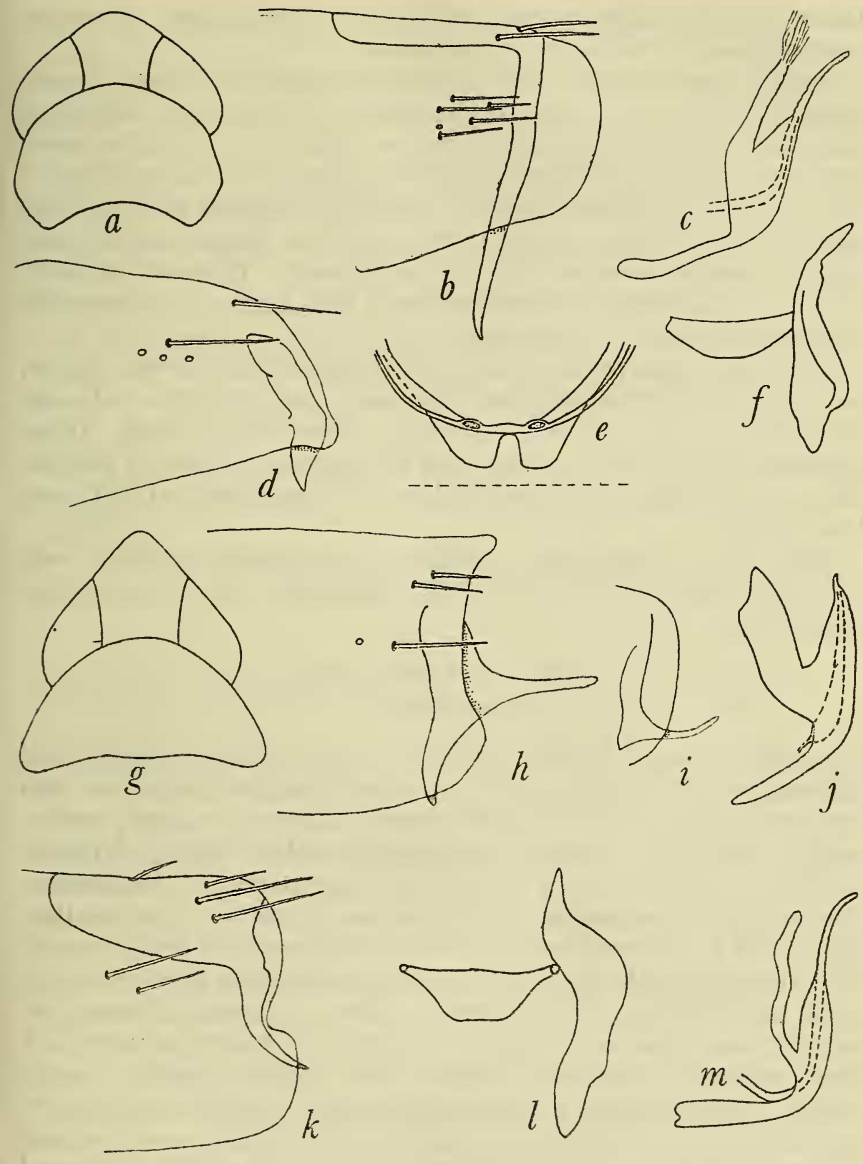

FIGURE 35.—*Protalebrella*. *a–f*, *P. brasiliensis*: *a*, anterior dorsum (paratype); *b*, pygofer, lateral aspect (specimen from Havana, Cuba); *c*, aedeagus, lateral aspect; *d*, pygofer, lateral aspect (specimen from Belém, Pará, Brazil); *e*, sternal abdominal apodemes (broken line represents conjunctiva); *f*, style and connective, dorsal aspect. *g–j*, *P. conica*: *g*, anterior dorsum; *h*, pygofer, lateral aspect (specimen from Branford, Fla.); *i*, apex of pygofer (specimen from Sierra Rangel, Cuba); *j*, aedeagus, lateral aspect. *k–m*, *P. iris* (type): *k*, pygofer, lateral aspect; *l*, style and connective, dorsal aspect; *m*, aedeagus, lateral aspect.

narrowly, and a spot on each side at midlength, paler. Forewing markings and venter as in *P. brasiliensis*.

A single specimen in the U. S. National Museum from Sierra Rangel (1,500 ft.), Cuba, was examined and found to have slight differences in the shape of the pygofer and its processes (fig. 35,*i*) and in the dorsal aedeagal apodeme, which was narrower than in typical members of this species. A form from several localities in Panama and the Canal Zone differs from the typical form in that the dorsal ramus of the pygofer process is curved slightly caudodorsad. It seems advisable to leave these forms undescribed until the degree of intraspecific intergradation can be established.

The holotype, a female from El Naranjo, San Luis Potosí, Mexico, is in the Snow Entomological Collections. A topotypic male, not mentioned in the original description, has been studied. Other specimens have been examined from Branford and Sanford, Florida; Brownsville, Texas; Cordoba, Mexico; and Santa Ana and El Cacao, Costa Rica.

This species superficially resembles *P. brasiliensis* and has been included under that name in some collections and in some older descriptions.

***Protalebrella iris*, new species**

FIGURE 35,*k–m*

Length of male 3.6 mm., of female 3.7 mm. Head well produced but with apex broadly rounded, crown with median length less than one-fourth greater than interocular width. Pronotum large, median length more than one-half greater than median length of crown; wider than head including eyes. Forewing unusual in the genus in that width of broadest anteapical portion of cell M is greater than that of cell R, and in that the fork of vein M occurs at point opposite the apical half of the inner apical cell; apical margin slightly falcate. Ocelli as in *P. brasiliensis* (Baker). Female seventh sternum triangular, well produced, the apex angulate. Male plates with a single row of macrosetae. Pygofer with posterior margin weakly bilobed; pygofer process arising along posterior pygofer margin, short, gradually tapered, vertical near base, curved slightly caudoventrad in apical portion. Style short, without preapical lobe, in lateral aspect bisinuate, the apical portion tapered to acute tip which is curved slightly ventrad. Connective in form of cross-bar. Aedeagus similar to that of *P. brasiliensis* but with longer preatrium. Sternal abdominal apodemes not traversing one conjunctiva.

Ground color of crown and pronotum sordid yellow, an indistinct median longitudinal vitta on crown and two similar parallel longitudinal vittae on pronotum, dull orange. Scutellum gray, the median

line, an intersecting, transverse anteapical vitta, a spot on each margin opposite end of transverse sulcus, dull ivory. Forewings with ground color milky opaque, an inverted sagittate marking on basal region to the claval apex, beginning as a bright orange vitta parallel to anal margins, becoming narrowly bordered externally with black near its base, extending caudad and widening along commissure, intersecting midlength of claval suture and extending laterad on both wings to costal plaque, thence caudomesad to claval apex, the internal portion of "head" of the arrow and an adjoining short area more basad along commissure, translucent, marked with dark gray dots and vermiculations, apex from claval apex to basal half of outer apical cell and all region more distad except paler extreme apex, fumose, with pale areoles in apex of cell M and in disc of outer apical cell. Venter entirely pale.

Holotype male and allotype female, Rio Caraguata, Mato Grosso, Brazil (F. Plaumann), in Snow Entomological Collections, University of Kansas.

Protalebrella terminata (Baker)

FIGURE 36,*a–c*

Protalebra terminata Baker, Psyche, vol. 8, p. 404, 1899.
Protalebrella terminata; Young, Univ. Kansas Sci. Bull. 35, p. 39, 1952.

Length of male 3.2 mm.; of female 3.2–3.6 mm. Head well produced but with apex broadly rounded; median length about one-fourth greater than interocular width. Pronotum with median length slightly less than one-half greater than median length of crown; width exceeding width of head including eyes. Ocelli as in *P. brasiliensis* (Baker). Female seventh sternum large, hind margin strongly produced medially, the apex acute or sharply rounded. Male plates each with a double row of macrosetae through most of length. Male pygofer in lateral aspect with posterodorsal margin shallowly concave, posteroventral margin extended ventrad in a short rounded lobe; pygofer process arising dorsally on posterior margin extending mesad, thence caudolaterad, gradually tapered throughout its length to acute apex which greatly exceeds posterior pygofer margin in lateral aspect. Style short, in lateral aspect bisinuate, the apex acute and directed posteroventrad, preapical lobe absent. Connective and aedeagus as in *P. brasiliensis*, but aedeagus with elongate preatrium and with shaft gradually tapered from base to apex. Sternal abdominal apodemes as in *P. brasiliensis*.

Ground color of crown, pronotum and scutellum dull yellowish white, of forewings, golden, a narrow median vitta on apical half of crown, a U-shaped marking on anterior two-thirds of pronotum and

occasionally a lateral vitta on each side of this, a bisinuate vitta in basal third and a pair of parentheses-like arcs near midlength of clavus, a dot near base, a V-shaped vitta in basal third, an irregular lobate vitta at midlength on mesal half (often wanting) and two strongly undulate transverse vittae in apical half of corium, orange. Apical cells variously and irregularly marked with black, frequently with several paler areoles outlined. Venter entirely pale.

In a pale variety of this species, the undulate markings of the forewings are narrow and pale gray, instead of orange.

The type, a male from Chapada, Brazil, is in the U. S. National Museum. Specimens have also been examined from Rio Caraguata, Mato Grosso, Brazil; Campinas, Brazil; Villarica, Paraguay; and Provincia del Sara, Bolivia.

Protalebrella parana, new species

FIGURE 36,*d–g*

Length of male 3.0 mm. Head distinctly produced with apex broadly rounded; crown with median length one-fourth greater than interocular width. Pronotum wider than head including eyes, with median length one-third greater than median length of crown. Ocelli slightly closer to median line of head than to inner margins of eyes. Male pygofer with a weakly developed process along ventral margin, and a double process arising along posterior margin, the double process consisting of an outer, short, curved process that is bifid apically and an elongate inner process that is directed ventrad. Style without distinct preapical lobe. Connective transverse, strongly joined to aedeagus. Aedeagus with preatrium short, shaft abruptly narrowed on anterior margin before apical fifth which is slender and slightly arcuate. Sternal abdominal apodemes not tranversing one conjunctiva.

Crown dull gray with a faint orange median discal spot. Pronotum lacteus with a pair of longitudinal orange vittae, broadened and approximate near anterior margin, extending to posterior margin. Scutellum chalky with basal angles darker. Forewing milky-translucent, an oblique vitta in base of clavus parallel to lateral margin of scutellum, an arcuate transcorial vitta in basal third, an undulate transverse vitta extending from midlength of costa caudomesad to claval suture, thence cephalad to midlength of clavus and mesad to commissure, and an oblique vitta from inner basal angle of outer apical cell through anteapical portions of cells R and M but not into apex of clavus, orange; apical cells faintly fumose except an areole near midlength of inner cell, and central portion of outer cell. Face and venter pale yellow; anterior coxae and hind tibiae at apices, orange.

Holotype male, from Jabaty, Para, Brazil, May 1924 (F. X. Williams), in collection of Hawaiian Sugar Planters Association.

***Protalebrella panamensis*, new species**

FIGURE 36,*h–k*

Length of male 3.0 mm. Crown produced, triangular, the apex narrowly rounded, median length one-fourth greater than interocular width. Pronotum wider than head including eyes, with median length

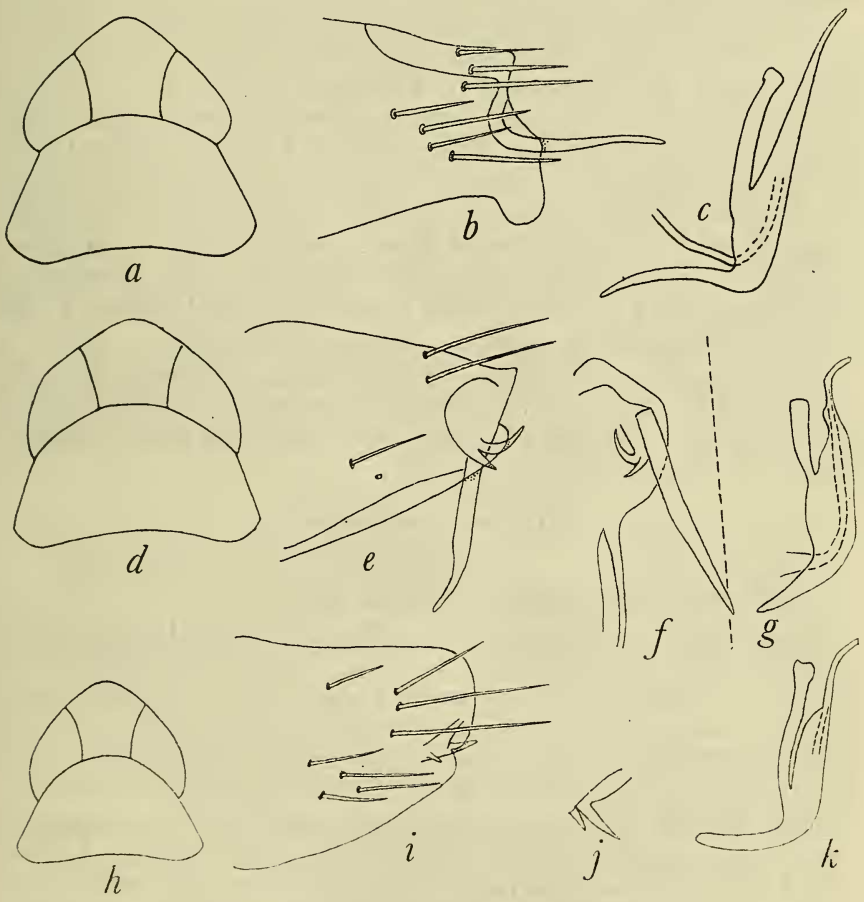

FIGURE 36.—*Protalebrella.* *a–c*, *P. terminata* (type): *a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, aedeagus, lateral aspect. *d–g*, *P. parana* (type): *d*, anterior dorsum; *e*, pygofer; lateral aspect; *f*, pygofer apex, left side, caudoventral aspect (broken line represent, midline of specimen); *g*, aedeagus, lateral aspect. *h–k*, *P. panamensis:* *h*, anterior dorsums *i*, pygofer, lateral aspect; *j*, pygofer process, ventrolateral and slightly caudal aspect; *k*, aedeagus, lateral aspect.

one-half greater than median length of crown. Forewing obliquely truncate apically; second apical cell slightly more than half length of inner apical cell; third apical cell short-petiolate. Female seventh sternum with hind margin convex on both sides of slightly produced median portion. Male pygofer with posterior margin broadly rounded, slightly notched at origin of pygofer process near midlength of posterior pygofer margin; pygofer process short, extended caudomesad, with a short basal tooth. Connective a transverse bar. Aedeagus with shaft shorter than dorsal apodeme, abruptly narrowed near midlength.

Crown brownish (probably result of post-mortem change). Pronotum yellowish white. Scutellum dull yellow tinged with darker in basal angles and anteapically. Forewing hyaline, an undulate, transverse marking near base, narrowing towards commissure, translucent pale yellow margined with dark, and a similar broader transverse band attaining commissural margin in apical third of clavus; an irregular marking beginning in apex of cell R and outer apical angle of cell M extending distad through basal half of second apical cell and extending slightly into adjoining apical cells, broadening apically to form a transverse band across inner apical cell and to fill most of third apical cell, smoky. Face and venter pale.

Holotype male, Río Hato, Coclé Province, Panama, Nov. 9, 1951 (F. S. Blanton), in U. S. National Museum (No. 62688), and an additional pair from same locality. One additional male examined from Pesé, Herrera Province, Panama.

Barela, new genus

FIGURES 37, 38

Type of the genus, *Protalebra decorata* Osborn.

Hind wing with submarginal vein confluent with apical wing margin; posterior branch of vein R entire apically; vein Cu_2 confluent with submarginal vein at point basad of vein m-cu. Forewing with appendix not extending around apex which is smoothly rounded; inner apical cell distinctly wider in basal than in apical half; second apical cell variable interspecifically; third apical cell triangular, usually stalked; outer apical cell longer than broad, not attaining apical wing margin, its base distinctly proximad of base of third apical cell; color markings orange, greenish, or smoky. Male plates elongate, triangular, attaining or exceeding posterior pygofer margin. Pygofer in lateral aspect with posterodorsal margin produced and rounded, disc with a vertical group of irregularly arranged macrosetae on apical half; pygofer process arising near middle of disc or along ventral pygofer margin. Ninth tergum with or without a tergite, if present not delimited posteriorly by integumental thickening.

Anal processes weak, not extending ventrad beyond middle of disc of pygofer. Style simple, not greatly elongate, preapical lobe occasionally present but not strongly developed. Connective triangular or papilioniform. Aedeagus with preatrium elongate; dorsal apodeme usually long and slender; shaft long, slender, without processes. Head not strongly produced, apex rounded in dorsal aspect; crown with median length equal to or less than interocular width; ocelli on rounded margin between crown and face, usually about equidistant from inner eye margins and median line of head. Pronotum at least one-half longer than median length of crown, wider than head including eyes; lateral margins strongly divergent posteriorly.

Distribution: Mexico, Jamaica, and Central America. In addition to the species included in the key below, *Protalebra apicalis* Van Duzee (Bull. Buffalo Soc. Nat. Sci., vol. 8, p. 74, 1907) appears to belong to this genus. A female paratype from Mandeville, Jamaica, was examined from the collections of the California Academy of Sciences.

Barela is closely related to *Protalebrella* and *Diceratalebra*, distinguishing characters for which have been discussed under the respective generic treatments. It is also closely related to *Beamerulus*, of which specimens are larger, possess a zigzag pattern on the forewings, have anal processes extending almost to ventral pygofer margin, and a ninth tergite delimited posteriorly by integumental thickening; all of these features in contrast to *Barela*.

Key to species of *Barela*

1. Crown dull yellow to sordid gray; male pygofer with process elongate, in lateral aspect directed caudodorsad . . . . . **decorata** (Osborn)
   Crown with distinct markings, or with an orange tint, male pygofer process not as above 2
2. Forewings marked with angular orange vittae; ninth tergite present; male with pygofer process longer (fig. 37,*h*) . . . **aureocosta** (Ruppel and DeLong)
   Forewings marked with green or black; ninth tergite absent; male pygofer process shorter (fig. 37,*j*; fig. 38,*b*) 3
3. Chief color markings of dorsum yellowish orange and yellowish green; forewing with third apical cell long-petiolate; aedeagus with preatrium elongate. **parvisaccata,** new species
   Chief color markings of dorsum black; forewing with third apical cell not petiolate; aedeagus with preatrium short . . . . **sobrina** (Ruppel and DeLong)

Barela decorata (Osborn), new combination

FIGURE 37,*a–e*

Protalebra decorata Osborn, Ann. Carnegie Mus., vol. 18, p. 255, 1928.
Protalebra sabana Osborn, op. cit., p. 259, new synonymy.

Length of both sexes usually 3.3 mm. Head slightly produced; crown with median length about equal to interocular width. Prono-

tum with median length one-half greater than median length of crown. Forewing with length of second apical cell measured along its inner margin equal to two-thirds length of inner apical cell; third apical cell not petiolate. Female seventh sternum not greatly produced; posterior margin with a median, very short quadrate projection; pygofer with multiseriate white macrosetae each side of ovipositor, and conspicuous tuft of black macrosetae beyond midlength. Male plates not exceeding posterior pygofer margin; each with an irregularly arranged close-set group of black spatulate macrosetae at midlength. Male pygofer with processes slender, elongate, acute apically, arising along ventral pygofer margin, in lateral aspect extending dorsocaudad, not strongly curved, not attaining posterodorsal pygofer margin; in ventral aspect the two processes extending dorsomesad, contiguous apically. Ninth tergum with tergite bounded laterally, but not apically, by integumental thickenings. Anal process present, not attaining middle of disc of pygofer. Style without distinct preapical lobe, short, rounded apically. Connective papilioniform. Aedeagus with preatrium elongate, slender; dorsal apodeme elongate, slender, more than half length of shaft, expanded apically, the expansion with three small lobes in lateral aspect; shaft very elongate, slender, weakly bisinuate, acute apically. Sternal abdominal apodemes traversing one conjunctiva.

Crown pale yellow to sordid gray. Pronotum ivory with a crescentiform orange-red marking extending between humeral margins attaining anterior margin behind eyes but not between eyes. Scutellum yellow, apex black. Forewing hyaline, an orange vitta of irregular width in basal half of clavus joining apically the expanded apical portion of an orange corial vitta that begins at base of costa, extends along costa for short distance, then parallel to claval suture to near midlength, the coalesced apical portions forming the anterior margin of an oblique hyaline streak extending caudolaterad from commissure behind midclavus, not attaining costal margin, the streak also bordered posteriorly with orange; clavus with white anteapical spot; an oblique streak in costal cell near midlength, base of outer apical cell narrowly, and base of third apical cell broadly, black; bases of first and second apical cells and apices of veins R, M and Cu orange broadly bordered with smoky, claval apex black; wing apex hyaline. Face, venter and legs pale except black mesosternal area; pleural portion of pronotum with a pink spot.

The type, from Los Amates, Guatemala, is in the Ohio State University collection. A topotypic male paratype has been examined through the kindness of Dr. J. N. Knull of Ohio State University. Additional specimens have been examined from San Pedro de Montes de Oca, Costa Rica; Cuernavaca, Morelos, Mexico (on *Eupatorium*

adenophorum); Jacala, Mexico; and Socorro Island (2,000 ft.) in the Revilla Gigedo group, Mexico.

Protalebra sabana is placed in synonymy, above, because the only two males examined from Panama appear to be referable to this species. They are from Tocumen, Panamá Province, and agree well with the above description except for two features: the length is 2.8 mm., and the pygofer processes are not quite as gradually tapering; i. e., they are slightly broader anteapically.

The form of the pygofer process, the near-distinct ninth tergite in the male, and the occurrence of the black macrosetae on the male plates are characters indicating that *B. decorata* is more closely related to species of *Beamerulus* than are other species of *Barela.*

***Barela aureocosta* (Ruppel and DeLong), new combination**

FIGURE 37,*g–i*

Protalebra aureocosta Ruppel and DeLong, Ohio Journ. Sci., vol. 53, p. 227, 1953.

Length of male 3.3–3.4 mm., of female 3.5 mm. Head slightly produced; crown with median length about one-fourth less than interocular width; posterior margin smoothly shallowly concave. Pronotum with median length more than one-half greater than median length of crown. Forewing with length of second apical cell measured along its inner margin less than two-thirds greatest length of outer apical cell; third apical cell long-petiolate. Female seventh sternum with posterior margin broadly convex, not greatly produced; pygofer without conspicuous tuft of black macrosetae. Male plates slightly exceeding posterior pygofer margin, each with a single longitudinal row of pale macrosetae from near base to apex; without conspicuous black macrosetae. Male pygofer with process arising near center of disc, slender, tapered, extending caudomesad, thence curved caudodorsad, not exceeding posterior pygofer margin, the two processes subparallel in ventral aspect. Ninth tergite indistinct, weakly delimited laterally. Anal process present, not attaining middle of disc of pygofer. Style widened anteapically, but without distinct preapical lobe, apex sharply rounded. Connective broad, triangular. Aedeagus with preatrium slender; dorsal apodeme slender, elongate, more than half length of shaft, slightly expanded apically in cephalic aspect; shaft slender, cylindrical, elongate. Sternal abdominal apodemes not traversing one conjunctiva.

Crown with ground color dull ivory to gray, an irregular, transverse interocular line across disc pale yellow to dull red. Pronotum with ground color gray, a transverse, broad dull red stripe across anterior portion of disc with a caudolateral extension on each side to humeral margins. Scutellum dull yellow, the extreme apex paler. Forewing

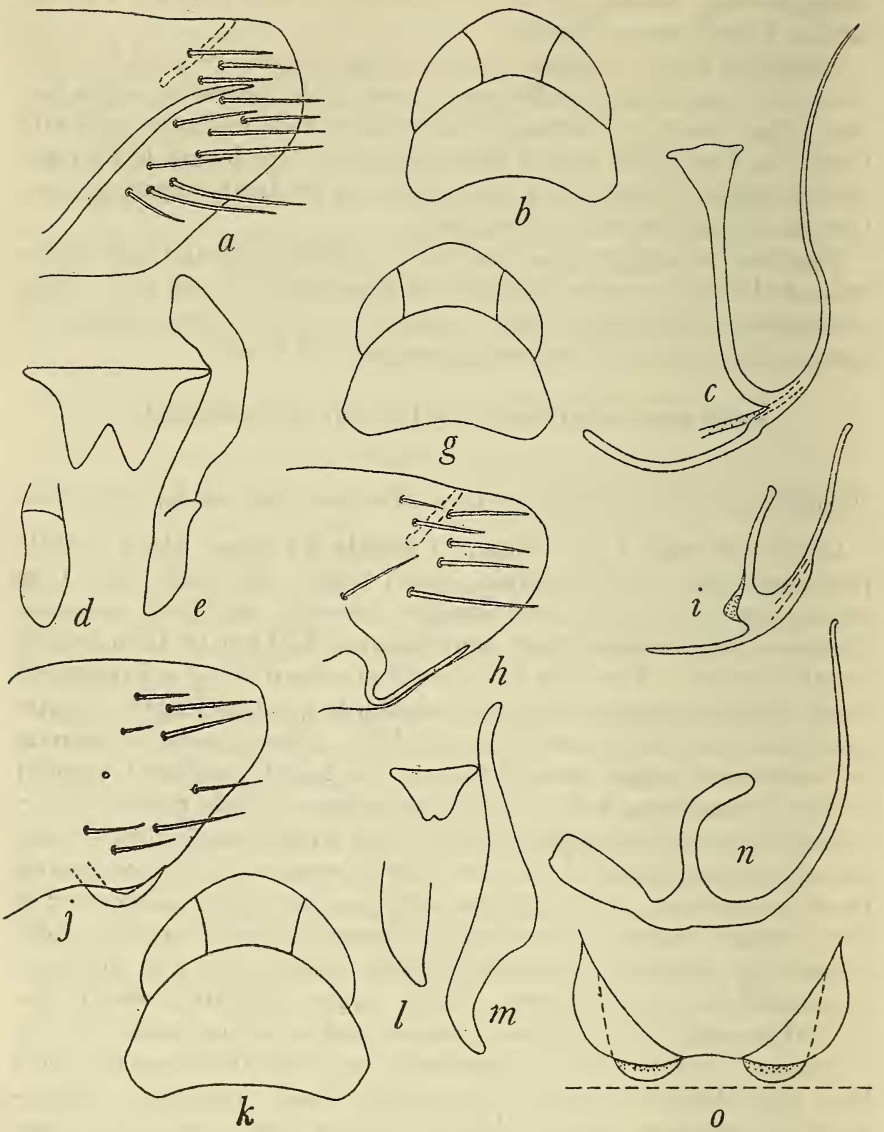

FIGURE 37.—*Barela*. *a–e*, *B. decorata:* *a*, pygofer, lateral aspect; *b*, anterior dorsum; *c*, aedeagus, lateral aspect; *d*, style apex, broadest aspect; *e*, style and connective, dorsal aspect. *g–i*, *B. aureocosta:* *g*, anterior dorsum ; *h*, pygofer, lateral aspect; *i*, aedeagus, lateral aspect. *j–o*, *B. parvisaccata:* *j*, pygofer, lateral aspect; *k*, anterior dorsum; *l*, style apex, dorsal aspect; *m*, style and connective, dorsal aspect; *n*, aedeagus, lateral aspect; *o*, sternal abdominal apodemes, ventral aspect. (In *a* and *h* the broken lines represent the anal process; in *o*, the conjunctiva.)

with ground color of basal two-thirds dull orange fading to yellow along costal margin, clavus with base, a spot near inner basal angle, one at midlength and an anteapical spot, corium with spot near base, a spot near midlength involving cell M and brachial cell and an elongate costal spot which is bordered with black, anterior to outer apical cell, yellow to hyaline; an areole in apex of cell R and cell M and in outer apical cell, hyaline, remainder of wing apex smoky, the yellow apical veins strongly bordered with darker. Clypeus and clypellus yellow, with a transclypeal narrow band just below ocelli, dull red; lora, genae and pleural portion or pronotum pale gray, the last with a pink spot; mesosternum black; remainder of venter and legs pale except apical half of each male plate which is darker along mesal margin.

The holotype male, from Iguala, Guerrero, Mexico, in the D. M. DeLong collection, has been examined. Additional specimens have been examined from Chilpancingo, the Cuernavaca-Acapulco Road, and Cuernavaca (on *Eupatorium adenophorum*), Mexico, and from Santa Tecla, El Salvador (on *Lantana camara*). The species has been collected in numbers from the latter host plant by N. L. H. Krauss.

In some males examined from El Salvador, the shaft of the aedeagus in lateral aspect is more abruptly narrowed than in typical specimens.

From *B. decorata* (Osborn), which it resembles superficially, *B. aureocosta* may be easily distinguished by its petiolate third apical cell in the forewings and its lack of conspicuous black macrosetae on male plate or female pygofer, in addition to the characters given in the key.

***Barela parvisaccata*, new species**

FIGURE 37,*j–o*

Length of male 3.8 mm., of female 3.8–4.0 mm. Head slightly produced; crown with median length slightly more than half interocular width. Pronotum with median length more than twice median length of crown. Forewing as in *B. aureocosta* (Ruppel and DeLong). Ocelli closer to inner margins of eyes than to median line of crown. Female seventh sternum with posterior margin broadly convex, with a small angular median excision; pygofer with multiseriate microsetae at each side of ovipositor. Male plates attaining posterior pygofer margin, each with single row of macrosetae from near base to apex. Male pygofer process arising near ventral margin, short, sinuate, extending ventromesad, thence curved caudodorsad, the two processes widely separated in caudal aspect. Ninth tergite wanting. Anal processes membranous. Style with distinct preapical lobe, the apical extension slightly decurved. Connective papilioni-

form. Aedeagus with preatrium about as long as dorsal apodeme, broader than in other species of the genus and trough-like; dorsal apodeme broader than shaft, curved gradually posterodorsad, less than half as long as shaft, which is slender, elongate, and smoothly curved dorsad. Sternal abdominal apodemes not traversing one conjunctiva.

Crown entirely greenish gray to ivory with a poorly defined, interocular transverse yellow streak. Pronotum with ground color dull gray, a transverse broad stripe across anterior portion of disc with a caudolateral extension on each side to humeral margin, dull red to yellow. Scutellum entirely olive green to dull yellow. Forewing with ground color pale green almost to claval apex, a small axillary spot, a transcommissural, transversely oval claval spot just behind scutellar apex, a transcommissural transverse line between claval sutures at midclavus; an oblique corial dash along claval suture near base, costal plaque, an oblique marking through cells R and M near midlength of wing and an areole anterior to base of each of apical cells, hyaline; wing apices smoky with a hyaline arc through inner apical cells. Face yellow to green, in some specimens with a faint interocular stripe below ocelli; pleural portion of pronotum usually with an orange spot, mesosternum black, remainder of venter and legs pale yellow to pale green.

Holotype male, allotype, and three paratype females, Cuernavaca, Mexico, July 1953 (N. L. H. Krauss, on *Lantana*), in U. S. National Museum (No. 62689).

Barela sobrina (Ruppel and DeLong), new combination

FIGURE 38

Protalebra sobrina Ruppel and DeLong, Ohio Journ. Sci., vol. 53, p. 228, 1953.

Length of male 3.1 mm. Head slightly produced with median length about one-fourth less than interocular width. Pronotum with median length about twice median length of crown. Forewing with length of second apical cell measured along inner margin less than two-thirds length of inner apical cell measured along same vein; third apical cell triangular or very nearly so. Male plates not exceeding posterior pygofer margin, each with a longitudinal row of macrosetae from near base to apex. Pygofer with process arising near center of disc, extending ventrad, curved at ventral pygofer margin and extending dorsocaudad and slightly mesad, in ventral aspect the two processes convergent but distinctly separated apically. Ninth tergite absent. Anal processes present, attaining middle of disc of pygofer. Style with weak preapical lobe, apex sharply rounded. Aedeagus with preatrium short, distinct; dorsal apodeme digitiform,

less than half length of shaft, not expanded apically; shaft nearly straight. Sternal abdominal apodemes not traversing one conjunctiva.

Crown pale yellow, the interocular marking bordering the hind margin and trilobate with the lobes extending anteriorly, the median narrower and longer than the lateral lobes. Pronotum blackish brown. Ground color of scutellum and forewings smoky, median portion of scutellum paler; forewing with a broad marginal costal streak in basal, a similar streak in apical half, ending in basal portion of outer apical cell, and a small wedge-shaped marking in base of third apical cell, yellow; clavus with an indistinct oblique vitta in basal half and an obliquely transverse marking behind midlength; corium with a similar vitta in basal half of brachial cell, a spot near its midlength, a spot before apex of cell M and a transverse marking near midlength of inner apical cell, translucent; veins R and M

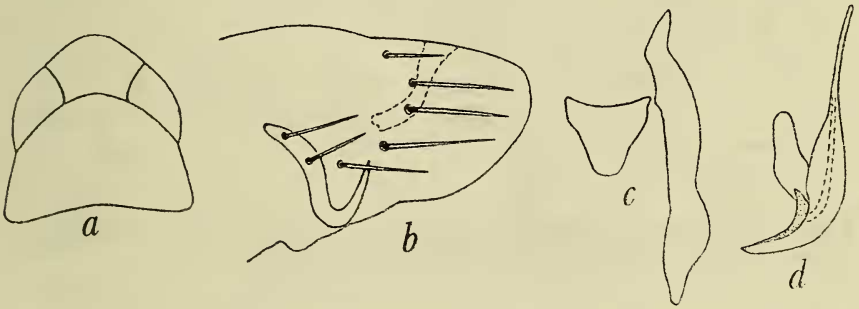

FIGURE 38.—*Barela sobrina* (type): *a*, anterior dorsum; *b*, pygofer, lateral aspect (broken line represents anal process); *c*, style and connective, dorsal aspect; *d*, aedeagus, lateral aspect.

yellow opposite claval apex; disc of outer apical cell hyaline. Face and venter entirely pale yellow, the dorsal portions of the pleural portion of pronotum smoky.

The holotype male, from Iguala, Guerrero, Mexico, has been examined through the kindness of Dr. D. M. DeLong. Other specimens have been examined from Compostela, Nayarit, Mexico, and from Totalapan, Oaxaca, Mexico.

SPECIES OF UNCERTAIN POSITION

Protalebra clitellaria Osborn

FIGURE 39

Protalebra clitellaria Osborn, Ann. Carnegie Mus. vol. 18, p. 257, 1928.

Length of male about 3.1 mm. Head short, triangular; crown with median length one-fourth greater than interocular width. Pronotum

wider than head including eyes, lateral margins strongly divergent posteriorly. Face broadly convex, in lateral aspect strongly divergent from contour of dorsum; ocelli on rounded margin between crown and face, closer to eyes than to median line of head. Male plates triangular with divergent rounded apices, much shorter than pygofer, each with submarginal row of conspicuous flattened macrosetae in third quarter of its length. Pygofer with posterodorsal margin strongly produced, with small group of irregularly arranged macrosetae in upper half of disc; a thickened bar in pygofer wall extending from dorsal margin to near middle of disc; anal process extending to middle of disc. Style without preapical lobe, curved slightly ventrad at apex. Connective semicircular with apex turned dorsad. Aedeagus without

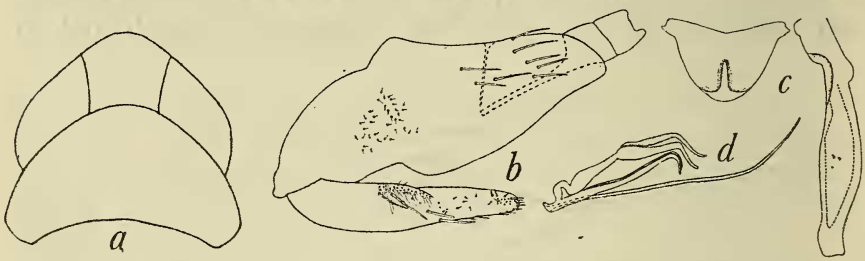

FIGURE 39.—*Protalebra clitellaria* (type): *a*, anterior dorsum; *b*, pygofer, lateral aspect; *c*, style and connective, dorsal aspect; *d*, aedeagus, lateral aspect.

preatrium; dorsal apodeme Y-shaped, sigmoid at base, the arms as long as the unpaired portion and decurved apically; a pair of elongate atrial processes extending beneath dorsal apodeme, each slender and tapering to acute apex which is decurved; shaft simple, setiform, twice as long as atrial processes.

Ground color of crown sordid yellowish gray. Pronotum burnished orange with a pair of black spots along posterior margin. Scutellum black suffused with golden, basal angles narrowly outlined in orange, a pair of spots one behind each apex of transverse sulcus, and the apex, ivory. Forewings transparent yellow; clavus with basal half burnished orange outlined with black except next claval suture; corium with a small, round black spot in brachial cell in basal third; claval apex and portion of adjoining corium fumose (the extent of the fumose marking undeterminable in the damaged type). Face and venter dull yellow.

Known only from the type, a male from Chapada, Brazil.

Specimens with intact wings are needed to determine the generic relationships of the species. The male pygofer, in its setal arrange-

ment and barlike integumental thickenings, and the anal processes suggest a relationship to *Protalebra*, but the aedeagus differs markedly from the species here assigned to that genus and suggests a possible relationship to *Elabra*.

***Protalebra sublunata* Osborn**

Erythroneura sublunata Osborn, Ann. Carnegie Mus., vol 18, p. 289, 1928.
Protalebra sublunata; Young, Univ. Kansas Sci. Bull. 35, p. 38, 1952.

Length of female 2.6 mm. Crown strongly produced with apex rounded; median length more than half greater than interocular width. Pronotum wider than head including eyes; median length about one-fourth greater than median length of crown; lateral margins strongly divergent posteriorly. Forewing without confluent longitudinal veins before cross veins; appendix not extending around wing apex; inner apical cell much broader at base than at apex; second apical cell narrow, parallel-margined, its length measured along inner margin approximately two-thirds length of inner apical cell measured along same vein; third apical cell triangular, long-petiolate; outer apical cell longer than broad, irregularly pentagonal, not attaining wing apex. Hind wing with submarginal vein confluent with apical wing margin; vein Cu_2 confluent with submarginal vein at point much basad of vein m-cu; veins R and M contiguous anteapically, separate apically. Face broadly convex in profile, slightly divergent from contour of crown; ocelli on rounded margin between crown and face, midway between inner eye margins and median line of head. Female seventh sternum short, transverse, posterior margin concave medially, the lateral lobes slightly produced and rounded; pygofer without conspicuous black setae.

Crown dull ivory, a conspicuous apical spot black, a pair of indistinct discal spots and an indistinct transverse interocular line pale gray. Pronotum orange, the hind margin broadly ivory. Scutellum ivory with apex black. Forewing with ground color dull orange in basal half, a transcommissural marking narrow and rounded at midcorium, much broader in apical half of clavus, ivory bordered with sanguineous, the sanguineous color extending to and expanding along costal margin at its midlength; a spot at base of brachial cell, anterior two-thirds of costal plaque and portion of costal cell anterior to outer apical cell grayish translucent; brachial and anteapical cells apically, appendix and first and second apical cells in their basal two-thirds, fumose; third and fourth apical cells margined with black internally. Face and venter entirely dull yellowish gray.

Known only from the type, a female from Fort Principe, Rio Guaporé, Brazil, Aug. 26, 1909, in the Carnegie Museum.

This species has the facies of a *Paralebra*.

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